THE NEW ZEALAND BEEKEEPER

FEBRUARY, 1966

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February, 1966

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Beekeepers' Exchange

THE JAUNT to Australia should prove to be most enjoyable and instructive, and initial arrangements are well under way. As reported elsewhere in this issue, an invitation has been made by globe trotter John L. Guilfoyle to spend a barbeque evening at his home at Darra, prior to the Brisbane Conference, and members of the New Zealand contingent can look forward to a most enjoyable occasion.

John has imported machinery to manufacture wax covered plastic sheet foundation which is semi-rigid, and of which over 100,000 sheets are already in use in Australia. With development of the freer market between the two countries, we shall no doubt be hearing and seeing the product over here.

IT IS GOOD to know that the scheme to spend a promising young beekeeper from New Zealand to Canada is about to materialise. The generous donors who made the trip possible, and the N.B.A. executive who finalised the details with the host association in Alberta have all contributed to a really worth while effort.

Exchange visits to different beekeeping countries and centres by keen young men to learn other techniques seems highly desirable, and the experience gained and passed back can only react to the great advantage of the industry.

Thoughts of interchanges between beekeepers brings to mind the language barrier, which does so much to promote misunderstandings and inability to appreciate each other's problems. One of mankind's tragedies is that we cannot freely converse and understand each other.

If You Live in the South Island You Know of

"GRIFF'S GRAPH"

"Griff's Graph" is a by-word with beekeepers in the South Island. L. A. M. Griffiin, Apiary Instructor, Christchurch, has kept accurate records over a period of 17 years which have enabled reasoned forecasts of the season ahead to be made with considerable accuracy. Here is an explanation of the record—with the warning that more hives do not mean more honey.

On the left hand side of the graph, honey is marked in 100s of tons. Next to it, on the same side, hive numbers are marked in 100s.

On the top, each 1-6 indicates the period between peak honey production years. On the bottom of the graph the seasons concerned, which naturally run into two years in the southern hemisphere.

Honey production is marked as a continuous black line, and hive increase over the years as a dotted line.

The broken line shows there has been an increase of hives in the district of approximately 10,000 in the last 17 years.

The black line shows there has been no increase in crop production over this period in spite of the increase in hive numbers.

Over the years, farming conditions have improved considerably. There is more seed growing, marginal land, hill fans, and other poor areas have been brought into production.

These improved conditions have been offset to a certain extent by heavier stocking and the eradication of many minor sources of nectar and pollen by agricultural spraying. However, in general, there has been a considerable improvement over the 17 years—at least for white honey production.

Canterbury may be the only district in the country where a graph of this kind is possible. It is flat, and bounded on three sides by mountains. The plains have a gentle fall of around a thousand feet or so from the foothills to the coast.

Large areas are of light river silt and shingly soils, with other areas of medium and heavy types of soil.

The information in the graph has been compiled by three Instructors in the district, and as it runs to a fairly definite pattern, I think it can be accepted as a fair estimate of the crops produced over these years.

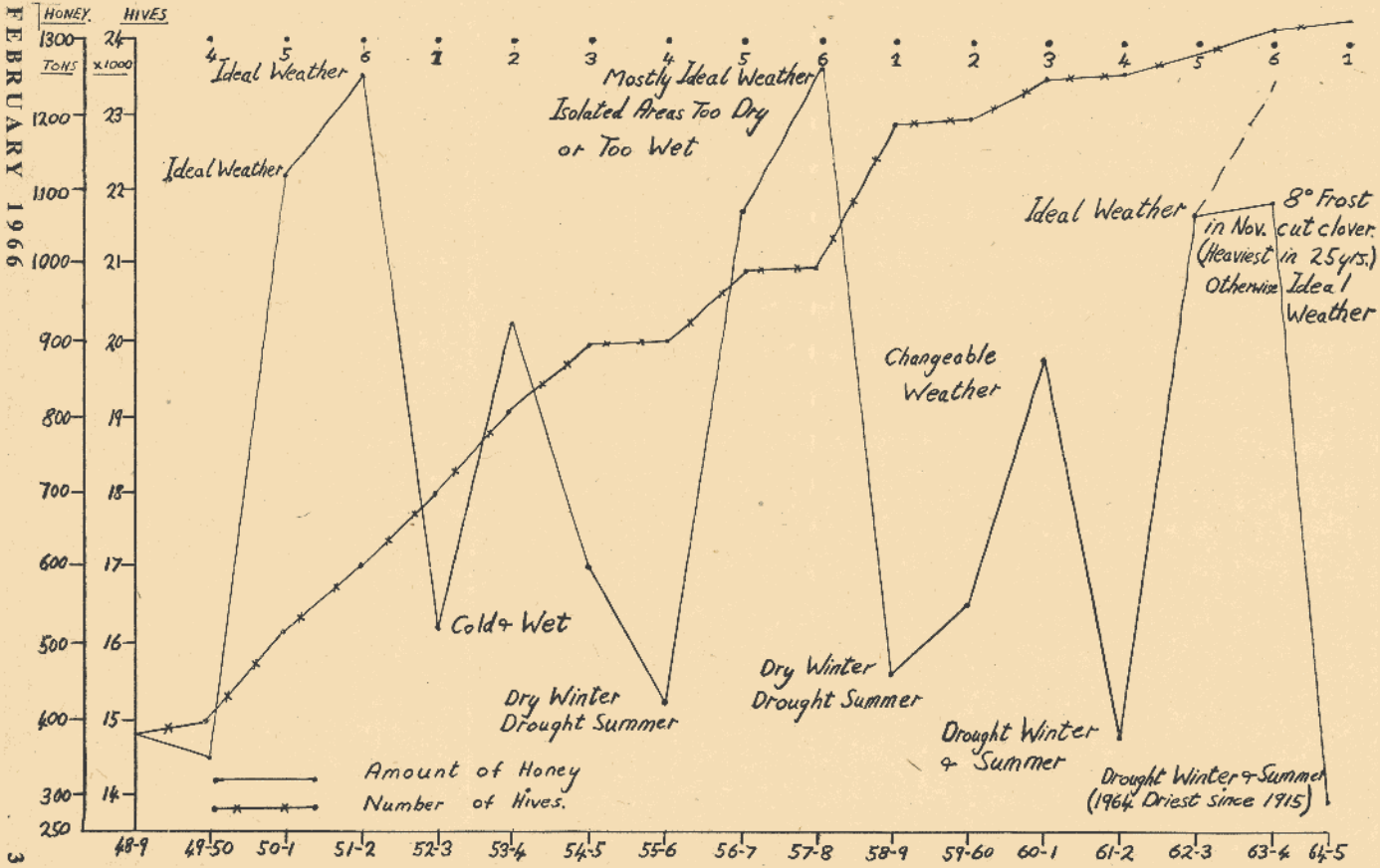
In the two seasons 1950-51 and 1951-52, one prominent beekeeper stated that he was sure a lot of honey was lost through there being insufficient bees to gather the nectar. That is *not* the case now.

Also, during the season 1963-64 Canterbury experienced a very heavy frost in November which completely cut all the clover. It was the heaviest frost for 25 years.

Nothing was available for the bees for 10-14 days, during which time they used a lot of honey already stored. This accounts for the loss of the "peak" on the production graph for that sixth year.

Now, why has there been no increase in crop returns over these years; when we have had more hives, better equipment for handling them, better honey house equipment for extracting supers rapidly, and better farming conditions to produce more nectar?

It would appear that a fair to large percentage of this 10,000 colony increase requires this extra nectar that is available for their own support, without increasing the overall district crop returns. ⟹ Page 4


FEBRUARY 1966
HONEY. TONS
HIVES x1000
1300
1200
1100
1000
900
800
700
600
500
400
300
250
24
23
22
21
20
19
18
17
16
15
14
4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1
Ideal Weather
Ideal Weather
Mostly Ideal Weather
Isolated Areas Too Dry or Too Wet
Cold & Wet
Dry Winter Drought Summer
Dry Winter Drought Summer
Changeable Weather
Drought Winter & Summer
Ideal Weather
8° Frost cut clover in Nov. (Heaviest in 25 yrs.) Otherwise Ideal Weather
Drought Winter & Summer (1964 Driest since 1915)
Amount of Honey
Number of Hives.
48-9 49-50 50-1 51-2 52-3 53-4 54-5 55-6 56-7 57-8 58-9 59-60 60-1 61-2 62-3 63-4 64-5

In short, the district is stocked to capacity, and overstocked in the three years out of the six when dry conditions prevent any growth or return from the light soils.

If we agree that the average good colony needs 2 cwt of honey and approximately 56 lbs. of pollen a year for its own maintenance before storing any surplus—and I believe these figures are fairly accurate, or maybe on the conservative side—how does this tot up for the increased 10,000 colonies over the years?

It simply means this: the district must be able to produce an extra 1000 tons of honey and 250 tons of pollen just to keep these bees alive without any increased returns to their owners, or overall district crop.

Many beekeepers have disagreed when I have stated it has been a good year. Well, this is understandable. They were probably running 350-400 hives 8-10 years ago; now they are in the four figure stage; but their honey crops have not increased accordingly.

Some beekeepers may claim that a colony does not need 2 cwts of honey a year for its own requirements; but I think it does. A colony starts breeding about mid-winter and from then onwards the brood area increases right through the spring and summer and wains during the autumn. During the main months a good colony will average about 12 combs of brood.

If we allow one cell of food to produce one bee, and the requirements of the nurse bee feeding it; winter stores, and the food required for feeding all the young bees working in the hive cleaning, fanning, ripening honey—and drones—then the amount of food taken from the hive by the foragers to supply energy for flight to the fields; the amount of nectar consumed by them in flying from flower to flower gathering their loads, and then the flight back to the hive—possibly against a head wind—would easily add up to the amount stated, so far as Canterbury, with its "nor'westers" are concerned.

Mr Ivor Forster, in his address on the "*Economics of Beekeeping*" at the Beekeeping Seminar, Ruakura, Hamilton, stressed the point that beekeepers must produce *more honey per hive*. This is right, and to attain that end one must not stock an area beyond its capacity to give reasonable returns.

BEEKEEPERS' SPECIAL TO AUSTRALIA

Following the preliminary announcement in last November's issue that a Beekeepers' Special was to be organised to visit Australia in May next, it is reported by convener George Winslade of 1H R.D., Oamaru, that response and support has been good.

More than a full coach load have signified intention of joining the trip, but there's often a slip twixt the cup and the lip, and some may have to pull out for unforseeable business or domestic reasons. If you can obtain a clearance certificate from the little woman or are able to take her with you, there is still time to write George direct and be added to the list. As originally defined, first come, first served will be the yardstick. Dates have been fixed for the N.S.W., Brisbane and Inverell Beekeepers' meetings, and a full itinerary of visits to apiaries and plants has been arranged. It should be instructive, profitable, enjoyable—and a business expense well worthy of inclusion on the right side of the ledger.

As this issue closes for press, George Winslade reports that a cordial invitation has been received from John L. Guilfoyle for the group to attend a barbecue evening at John's home at Darra the evening before the Brisbane Conference.

Incidentally, John has registered the trade name 'Plasticore' as the name for a new type of foundation which is to be put on the market in Australia. Semi-rigid plastic sheets are coated on each side with pure beeswax, and then imprinted. Appearance is similar to the standard sheet of foundation, and imported sheets have been thoroughly tested under all types of Australian conditions to the extent that over 100,000 sheets are already in use.

AUSTRALIAN HONEY U.K. MARKETING ATTACKED

This analysis of honey marketing costs was published in a recent issue of "The Australian Beekeeper", and in view of our own interest in the subject, the Manager of the N.Z. Honey Marketing Authority and the London selling agents for N.Z. honey were invited to comment.

• PRICING AND SELLING CONDITIONS

The following price summary in respect of Australian honey marketed in the United Kingdom, under present pricing conditions, is based on pricing data furnished by the Australian Trade Commissioner in London.

	Stg. per lb. pence
1. **Quotation** — 100/- Stg. per cwt. c.i.f. in London	10.71
For Light Amber—landing charge (quay rate) @ 47/- per ton	.25
—broker's commission (2%)	.22
Price to U.K. packer	11.18

2. Working back from an average retail price the position is:

	Stg. per lb.
Average retail price of Australian and blended honey	3/2d.
Retail margin (20%) on wholesale trade price	6.33d.
Wholesale trade price	2/7.66d.
Wholesale margin (15%) off wholesale trade price	4.75d.
Price paid by wholesaler to packer, excluding discounts	2/2.91d.

3. British packer therefore buys in bulk at 11.18d. lb. and sells in packed form at 2/2.91 per lb. which represeits a margin of 1/3.73d. per lb. Stg. or 131% to cover his processing, packing costs and profits, etc., (see paragraph 4).
4. It was estimated that for "light amber" an additional 55% would be added to the packer's purchase price to cover handling, clearing, blending, bottling and marketing costs including an estimated profit of 20%. This would then amount to a total cost to the packer of 1/5.33d. Stg per lb.
5. British packer is therefore pocketing, above reasonable expenses and profit, about 7½d. Stg. per lb. which in terms of Australian currency is over 9d. per lb.
6. Returning to the 100/- Stg. c.i.f. price paid to the Australian exporter, it is understood that the costs acssociated with shipping, etc., to U.K. amount to about 16/6 Stg. cwt. The F.O.B. value would therefore be about 83/6 Stg. or 104/4½ A.C. per cwt. = **11.2d. lb. A.C.**
7. The packer's costs (including handling, processing, packing, blending and a reasonable profit) must be 3d. to 4d. per lb. at least so that the Australian beekeeper could not receive more than **8d. lb.** and probably less.
8. To sum up, the Australian producer is lucky if he receives 7d. to 8d. per lb. for his light amber honey sold to U.K. under present market conditions while the British packer takes not only his normal profit of about 3d. per lb. but an extra profit of 9d., that is 1/- A.C. all told.

Is it any wonder the Austradian beekeeper is struggling to make a reasonable living and that the Canadians decided to break away from the domination of the British packers?

The foregoing statement is of vital interest to New Zealand producers and packers, and the Manager of the N.Z. Honey Marketing Authority was therefore invited to comment on the accuracy or otherwise of the information given. Mr. Gosse's apraisal of the summary is as follows:—

I have analysed the figures quoted and find that they do not add up to my reckoning of costs involved.

The average retail price of Australian and blended honey is quoted as 3/2d. This suggests that the pack is not 100% Australian honey but contains honey from other countries which quite conceivably would be higher priced honey blended in to lift the overall quality of the pack. Let us assume that the pack consisted of 75% Australian and 25% N.Z. Extra Light Amber at 155/- per cwt. This would make the basic cost per lb. 12.184d., which; with the landing charge and broker's commission would bring the price to the U.K. packer to 12.594d.

Additional costs have been calculated as 55% or 6.15d. per lb., and this includes 20% profit or 2.23d. per llb. leaving 3.92d. per lb. to cover all costs from quayside to packers' plant to wholesaler's warehouse.

I have calculated this figure as 12.331d. but, of course, some of the costs can only be guessed. This figure of 12.331 is calculated as follows:

	d. per lb.
Delivery from Quayside to Packers' Factory	.400
Storage & Warehouse Handling	.250
Direct Packing Costs:	
Power, Fuel, Plant R. & M.	.390
Wages	1.000
Glass Jars	4.854
Cardboard Outers	1.687
Labelling & Sundries	.500
Overhead	1.000
Blend Loss 1% of 12.594	.125
Distribution:	
Selling Commission 5%	1.375
Cartage & Freight	.750
	12.331

The total cost excluding packers' profit would therefore be:—

75% Australian Honey	8.032
25% N.Z. Honey	4.152
	12.184
Landing Charge	.250
Brokers Commission 2% of 8.032	.160
	12.594
Charges from Quayside to Wholesalers Warehouse	12.331
Profit 15.76%	1.985
	26.910

As far as my estimation of costs are concerned it must be conceded that costs of packing materials in U.K. would be less than New Zealand. This might affect the figures by 2 or 3 pence. It is hard, however, to explain a difference of 8.411d. between my estimate and the 35% in the published figures.

(Signed) C. T. GOSSE, General Manager.

Asked to comment on both the Australian statement and Mr Gosse's analysis, the London firm of Kimpton Bros. (Red Carnation) Ltd., who handle

New Zealand sales in the U.K. agreed that the Australian figures were misleading, and the following is an extract from their reply to Mr Gosse:

"To my mind your figures are much nearer the truth, although distribution costs over here are very high indeed. As you so rightly point out, the majority of Australian honey sold in this country is blended with more expensive honeys and this increases the price quite considerably, especially as the majority of the blends only contain approximately one third Australian honey.

A very important factor which has been omitted is the cost of publicity. One of our biggest packers spent close on £100,000 in one year on advertising, and although this is a peak figure, the yearly costs are still high.

Most retail margins are in the region of 25% and not 20% and nowhere in the Australian article, is it mentioned the cost of taking the honey from the quay to the packing factory (certainly .3d./.4d. per pound). In addition I understand that most of our packers work on a blend loss of 2%.

You may rest assured that if there were the sort of profits in the packing and selling of honey that are indicated in the article, we would have more honey packing plants than any other in the food industry."

Book Review

"ME AND THE BEE" by May Abbott (Cassell & Co. Ltd.)

Good laughs are not easy to find. The merriment caused by a clumsy assistant (never, of course, the beekeeper) tripping over a pail of honey in the extracting shed is tinged with natural regret at the waste of product involved and the interruption to normal activity whilst the mess is cleared up.

"ME AND THE BEE" by May Abbott is a new addition to beekeeping literature which does not intentionally set out to teach, yet is full of lessons in how to laugh at yourself.

The author is a Fleet Street journalist who felt the urge to 'commune with nature' as she records in the foreword to her book, and provided an entertaining yet factual account of her entry into the hallowed craft by the purchase of a 'bargain' in beehives advertised for sale in the local newspaper of a London suburb.

Here indeed was an amateur, for she thought that honey was freely supplied by the bees and only had to be scooped out of their hive with a spoon when needed for the table! She quickly realised the error of her ways, and that the purchase of a 'cheap' hive was not necessarily a gilt edge investment — particularly with the vagaries of English climate to be considered.

She found that it was a constant battle of wits with workers and robbers, drone and queens — and the bees, with their insatiable and expensive taste for food in the form of sugar, invariably won.

Having realised that beekeeping involved more than was first thought to be the case, the author continued her subject with practical instruction from experienced apiarists and studied recognised works on beekeeping and apiary management until the glorious season arrived when she was able to boast a surplus production of 85 lbs of sweet scented, liquid gold.

Computed on a basis of equipment bought and the end product bottled, the 85 lbs cost a mere £1 per pound. Expensive, maybe, but a considerable improvement on the very first **half** pound produced at a cost of 32½ guineas.

"ME AND THE BEE" is both amusing and instructive and gives a humorous and analytical insight into the problems which beset a suburban housewife mad enough to take up an 'odd' hobby.

Whilst of no practical help to the commercial man in the accepted sense, **"ME AND THE BEE"** is well worth its modest purchase price for its basic good humour and supply of laughs at a novice's expense. It has an added zest to be able to foresee some of the inevitable problems that will be met, and it is somewhat like looking over the shoulder of a stranger and being unable to help them.

UNCAPPING MACHINE
Now Made in New Zealand

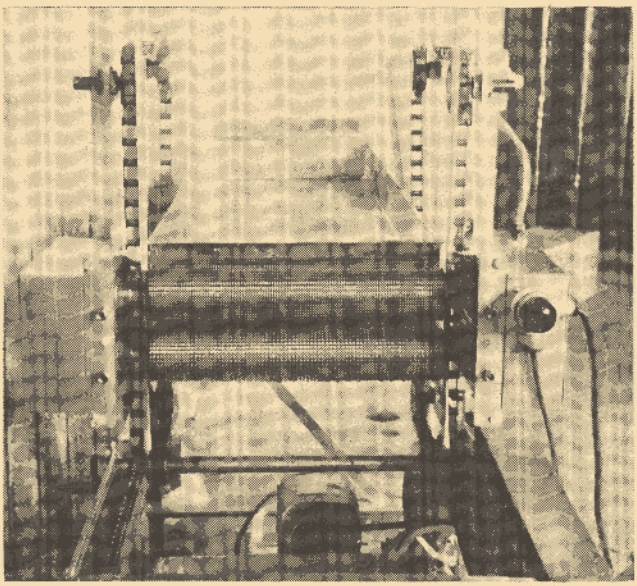
THE OWENS UNCAPPING machine, patented in the United States in December 1962, is now being manufactured under licence in New Zealand by J. A. Davies (Honey) Ltd, Drummond, Invercargill. The machine has been modified from the original to suit N.Z. standards, i.e. higher voltage, chains, gearing etc., and sell to order at around £220. It is claimed that the monotony and discomfort of perspiring all day over a steam extractor is now a thing of the past.

The machine consists of two pairs of rollers that punch holes in the cappings instead of cutting them off as other machines do.

The combs are placed on a conveyor below the rollers. The conveyor feeds the combs to the conveyor chain, that pulls them up between the rollers that puncture the cells and then delivers them to a holding rack.

The speed of the chain can be varied *to suit any extracting plant,* so that the speed of uncapping will match the extracting. Speeds of 6 to 20 combs per minute have been used, but the machine is normally adjusted to uncap 12 combs per minute. To emphasise the capabilities of this uncapper: it can handle 1,200 combs (150 supers) per hour. Admittedly, no extractor is capable of handling 3 ton in an hour. However, a more practicable operational speed is simply obtained merely by turning a switch "on" or "off" or altering the speed of the chain.

The rollers are 3 in. in diameter and approximately 16¾ in. long. They are heated to 120° F or higher by



Shown clearly are the rollers which punch holes in the cappings, and the conveyor to the holding rack.

electrical tubular elements and have self-aligning ball bearing supports on each end. The rollers are turned by the honeycomb as it is pulled between them. Pressure for puncturing is developed by spring tension on the rollers. The two sets of rollers have various sizes of pins, all ¼ in. in depth, but spaced differently in each pair of rollers to ensure that all cells are punctured.

The prinicpal advantages of this machine are: the great range of speed at which it will uncap; its mechanical simplicity and greater efficiency. In fact, the machine is so simple that no operational skill is required. One merely flicks a switch "on" or "off". Slum-gum (propolis) is eliminated to a minute proportion of that which has to be contended with under other systems of uncapping. Consequently our honey is not darkened neither is its flavour impaired.

The Owen's uncapper is a pleasure to operate and the efficiency of the machine is it's simplicity. Any single part is replaceable by the owner himself and no skilled mechanical knowledge is needed. A quarter horsepower electric motor plus 4 tubular standard heaters within the rollers operate the entire machine at a very low running cost.

Where the uncapper is adjusted to maximum operational speed of the extractor, one man is able to extract all day non-stop, so that it is of particular value and advantage to the one-man outfit. For the larger commercial man there is the fact that no extractor yet produced is capable of exceeding the operational speed of the Owen's uncapper.

A convincing demonstration of the uncapper at work with extracting equipment was given at the J. A. Davies home apiary at Drummond during the Field Day on February 5.

OVERSEAS STUDY TOUR

ARRANGEMENTS HAVE NOW been concluded between the National Beekeepers' Association and the Department of Agriculture in Edmonton, Alberta, for a young beekeeper to study commercial beekeeping in the Province.

Preliminary information was published in our November 1963 issue that the Bursary was to be offered and the terms and conditions governing the award. Unfortunately, there has been unexpected delay in finalising arrangements in Canada, but it has now been established that the successful applicant will be the protege of the Alberta Beekeepers' Association and the Apiculture Branch of the Canadian Department of Agriculture.

Branches have been circulated by the General Secretary calling on them to submit nominations for consideration and lodgement by January 31, but it is unlikely that the name of the successful bursar or the nominating Branch will be known in time for inclusion in this issue. If possible, however, a stop press notice will be published.

The visit to Canada will be for the period April-September 1966 and a programme of work has been arranged to cover a wide variety of commercial application and practice in Central, North Central, Northern and Southern districts of Alberta, some of which will entail journeys with Mr J. W. Edmunds, Supervisor of the Apiculture Branch, Department of Agriculture on inspection work at various apiaries.

The fortunate recipient will have all expenses for his trip paid for from a fund established for the purpose by the National Beekeepers' Association, which was generously supported by a number of people within the industry. The knowledge gained will be considerable, and on his return to New Zealand it will be obligatory for addresses to be given to a minimum of five Association meetings and a Dominion Conference, to enable as many as possible to benefit. Reports and articles dealing with the Canadian visit will also be submitted for publication in the "New Zealand Beekeeper". The host association in Alberta have intimated that gainful employment will also be found for the bursar, so that he will be able to pay his own way in the course of his practical duties.

Some Observations on

SWARMING

by R. Davidson Jnr. of Timaru

Swarming is a difficult subject upon which I have spent considerable time, and over a period of four years conducted numerous experiments. Several new facts have evolved which show a different sequence of events than those generally believed. I believe most of these facts are proven. One or two have been assumed, but they do all tie in, and at the finish of this article will give the results of some of these experiments. I will start by setting out the different parts, explaining them a little and do my best to tie them all together.

A good queen in a healthy colony lays an increasing amount of eggs per day reaching a peak shortly after the onset of a major honey flow. Unlike a light flow of honey which stimulates egg laying, a heavy flow retards it, not because the queen has nowhere to lay, but because the queen cannot lay. The volume of fresh honey being evaporated in the brood-nest cools it to such an extent that the nurse bees are unable to maintain a steady 94° F, and a queen cannot lay at anything other than this temperature. This is an immediate effect of a heavy flow and with a good queen is normally rectified overnight, or during a spell of cool weather. As the quality of an individual queen declines, then so does her ability to have this honey removed.

A laying queen produces substance but only when she is laying, and as her laying increases or decreases so does the amount of "queen substance" she gives off. Now this queen substance controls the temperature within the hive. The more of it, the greater the control is to 94°F. The less of it, the more dependent the hive becomes to the outside temperature. If a queen is for any reason restricted in her laying, or starts to tail off because she is old or inadequate then the temperature within the brood-nest will start to vary, and this restricts her laying still further. There is another aggravating factor, and that is if the temperature in the brood-nest is not held at a constant 94° F, the bees will not remove the honey put there during the day. This depends a lot on the volume of honey coming in and the quality of the queen, although even the best of queens cannot stop it if the bees have nowhere else to put the honey.

Once the temperature starts to vary it steadily becomes worse, and the increasing lack of queen substance causes the bees to start queen-cells. This is the only reason they build queen-cells and the number of cells depends entirely on the amount of surplus royal jelly available, which in turn depends

on the number of young bees in the colony, and the availability of incoming food supplies.

The presence of queen-cells in a hive does not in itself mean that the colony will swarm. They simply mean that the bees are short of queen substance. They are a symptom of what is wrong with a colony, and it rests with the beekeeper to correctly diagnose the complaint.

A colony will swarm with or without queen-cells, and breaking them down will in no way stop a swarm from leaving. If there are cells, it indicates bees require "queen substance", and the only way they can get this is from a healthy queen laying an increasing amount of eggs per day to match the increasing population and food supplies. In general, the broodnest of a good queen should steadily increase as the average outside temperature rises, and steadily decrease with the longer cooler nights and, therefore, lower average temperatures.

Temperature Control

Once a queen starts to fail or is restricted in her laying to the extent there arises a shortage of "queen substance," the temperature variation steeadily becomes worse and swings between 86F° and 98F° in the centre of the broodnest. When it gets to this stage the queen has practically stopped laying and can therefore fly. The average outside temperature is increasing, and the temperature inside is steadily swinging higher until it reaches 102°F in the centre of the broodnest or cluster of bees. When this happens the bees panic and rush out of the hive simply because it is too hot inside. If the queen rushed out with them then the colony has swarmed, but if she stayed or could not fly, then the bees will return until the temperature inside again reaches 102°F, when once again the bees will panic and rush out of the hive. This time they may have the queen with them, the bees can smell the queen in the air and they follow her. She doesn't know where she came from, so settles on a bush, all the flying bees cluster around her, and there we have a swarm. But the only thing that caused the bees to leave the hive was panic, when the internal temperature reached 102° F.

When a colony with a good queen swarms it is just too full of bees and honey, resulting in a badly restricted broodnest. But with a poor queen or a queen that fails, the hive may not be full of either bees or honey, in which case the high temperature is helped by the bees themselves. With a failing queen the colony morale is very low, little work is being done, and the bees tend to cluster on the frames, making little effort to cool the hive by circulating air. This is not helped by the excess of drones who cling to the combs without moving, seriously impeding any air currents circulating in the hive. There is also the point that bees use honey from their honeysacs to aid cooling by evaporation, and with little water or fresh nectar coming in because of the low morale in a swarming colony, with constant overheating, the existing nectar supplies are rapidly evaporated to the point where the bees have nothing left to combat the persistent heat. At this point the colony swarms, and this also explains why each bee in a swarm normally leaves with a full sac of ripe honey. In either case, whether a hive is full of bees or not, once this situation arises all that is required is a hot day with most of the bees inside, and out comes a swarm.

If an explanation is given of a typical sample of each of two series of experiments, it should be sufficient to give a general idea without going into too many details, or holding a post mortem over any of the failures or blind alleys that were encountered along the way.

A caged queen was added above an excluder to each of half the colonies in an apiary. Of the treated colonies there was no swarming but four supercede, and of the untreated colonies, three swarmed and there was no supercedure. This result is fairly accurate in that a higher percentage of treated colonies supercede than untreated colonies swarm, andalthough in other experiments there was supercedure in untreated colonies, there was no swarming in treated colonies. An interesting

side-light to this experiment was that where a caged queen was added to a colony with a good queen there was an average increase in honey gathered of approximately 10%. I have checked this thoroughly and found it correct but it is due, not to the added "queen substance" from the caged queen, but the increased "queen substance" from the queen below the excluder which, in every case, had a pronounced increase in laying that held the treated colonies from swarming long enough for supercedure to take place. The added "queen substance" from the caged queen encouraged the bees to hold a larger broodnest at a steady 94° F, resulting in increased laying.

One colony in the back yard swarmed. A week later it was found to contain virgin queens and hatching cells, and although full of bees it was not clustering outside on a hot day.

The temperature in the broodnest varied from 86°F in the morning to 98°F in the heat of the day. A frame of young brood was inserted on a showery cool day with periods of warm sunshine, and the hive was artificially sheltered from the wind but exposed to the sun. Bees immediately began clustering outside and blocking the entrance. There was a period of rain followed by hot sunshine, and half an hour later the colony swarmed.

The lid of the hive was immediately removed and bees began rushing out, fanning vigorously as if overheated.

The maximum temperature when the swarming commenced was 102°F in the centre of the broodnest and when the temperature dropped to 93°F—a matter of two or three minutes—all signs of swarming ceased. In this time most of the bees had left the hive and settled on a nearby fence in a swarm that contained three virgin queens.

This experiment has been repeated on numerous occasions, always with the same result. Although a frame of young brood was not necessary, it did seem to speed up the process, and the presence of a laying queen only affected the result by her ability to lay at the time, and on the days preceding the attempt at overheating. In all cases the swarms were replaced on the hives they came from, with room to lay and where necessary with a good queen. All queen cells and virgin queens were placed above a queen excluder and given a top entrance to allow for mating. There was no further attempt at swarming, all the unsealed queen cells were eaten down as soon as the queen below the excluded commenced laying heavily again, and all the virgin queens died,—except in a large colony where they were separated from the queen below by three or more supers of comb. The reason the virgins died was that with a heavily laying queen below, the temperature for some distance above the excluder was being held at a fairly constant 94°F and a virgin queen requires a fluctuating temperature with a sudden rise to above 98°F to send her out on a mating flight. If there is no variation, they seem to get distressed and after two or three weeks the bees eventually kill them.

Other References

There were a lot of other experiments plus four years close observation of swarming hives that there is not the space to write about, but I would like to quote from others who have studied the subject.

C. G. Butler, on "queen substance":—

"The close relationship between swarming and supercedure was emphasised by Cale (1946) who stated that more swarms are the direct result of supercedure than of any other factor. Alphonsus (1932) recorded three instances in which swarms emerged from colonies which were, in his opinion, superceding. One occurred in spring, when two queen cells were raised in a six comb nucleus but a spell of hot weather produced a swarm. Two others occurred in August when a very warm day caused two colonies, with two and four queens respectively, to swarm—both swarms superceded their old queens in September. Conversely he observed swarming was inhibited by cold rainy weather."

M. Lindauer (1955), on the Temperature Regulation of the Honeybee Colony:—"The bees have another means of producing cooling through evaporation besides water spreading, this involves a number of bees which apparently remain inactive on the combs when there is overheating. These bees were seen to open their mouth and expose a thin film or droplet of nectar, repeating this process every one or two seconds until overheating ceased. There is no doubt that this process greatly speeds up the evaporation of the contents of the honeysac. When overheating occurred unexpectedly the bees used thin nectar or unripe honey for cooling."

Ronald Ribbands, on the Behaviour and Social Life of Honeybees:—"The inactivity of the swarm bees is obtained at the expense of both foraging an dbrood-rearing. It was found that during a nectar flow the mean gain in weight of each of six normal colonies was 32.7 + or — 3.6 lb. while that of three similar colonies with queen cells are only 13.3 + or — 3.8 lb."

Rosch (1930): An experiment of Rosch (1930) led him to conclude that swarms consist of bees of all ages in about the same proportions as in the parent colony.

This serves to confirm my observations, and possibly makes the position seem fairly hopeless, but I presume to offer some advice. *Make sure that in a healthy colony there is a sound young queen. Give her ample room to lay on the best of comb, sufficient food, adequate storage space, and above all do not neglect her.*

BRANCH NOTES

WAIKATO

The Annual Field Day will again be held this year at the Opal Springs, Matamata. A full day's programme has been arranged, with the emphasis on practical demonstrations, discussion of problems, and exhibits of equipment.

The venue and company will be congenial, and visitors are reminded to bring with them their bathing togs for enjoyable relaxation in the warm waters.

Crop reports so far received locally at the end of January vary from average to poor——but there is stil time yet for a good crop to be gathered.

Reported by H. N. TUCK.

★ ★ ★

Our barbary flow came and went in about a week, when quite a lot was stored. Unfortunately heavy rain and wind knocked most of the flowers off and that was it!

As usual, November had a good share of heavy westerly winds, which kept colony strength back, even though butter cup was yielding a little, when weather was suitable.

Early in December the weather improved and the sun shone. A good flow from clover started, with the prospect of good crops and it being all over by Christmas — as one beekeeper told me. It just about was so, as the rain started and lifted our hopes, but it didn't stop, it turned cold. At Taupo snow was reported and frosts inland caused more damage. Since then there has been little settled weather. Pasture growth is heavy in most places so that the prospects are for below average crops, or only average. Taweri was yielding well when the rain started, and with all the rain and the trees in full flower it was hard to bear, but average crops were gathered. Kamahi yielded well in some areas, while rewarewa was very poor.

—Reported by Cliff Bird.

★ ★ ★

NORTH OTAGO

The honey season went off to a good start, most hives gaining a full box before Christmas, and some apiarists started extracting on a small scale, until everything dried up. The much needed rain has been followed by indifferent weather ever since, and indications of a better-than-average crop seem pretty remote. Unless there is a drastic change for the better, a slightly below average crop would be the forecast based on conditions here as at the latter end of January. Of course, we live in hope.

Otago and North Otago are combining their Field Day for February 19 to be held at Pleasant Valley, half way between Dunedin and Oamaru; visitors from any other area will be very welcome, and please bring a fine sunny day with you.

—Reported by George Winslade.

★ ★ ★

NELSON

The present season is quite a headache here in Nelson. With snow over Christmas and hardly any summer weather the returns are rather light. Our President, Ross Brough, has had three weeks in Australia during the holidays and we look forward to hearing his accounts.

Instructor Paul Marshall and his wife are the happy parents of another

fine wee son. Mr Marshall keeps our members very enthusiastic with his practical talks and more new members are joining, necessitating the hiring of a hall.

Meetings average 22-24 present.

—Reported by Mrs Ila Cropp.

★ ★ ★

NORTHLAND

A very successful Field Day was held at Gavin's Apiaries, Titohi, in October.

Mr J. Byers, district instructor, was present as were also a good contingent from the Auckland Branch led by Mr Stan Broadhead.

Some points about queen raising (baby nucleus hives) learned at the Ruakura Seminar were passed on to members. Spring overhaul of hives was also dealt with, and some points about marketing cut comb honey were outlined by Mr Broadhead.

The weather was kind for the occasion and all voted it a day well spent.

Honey crops in the area have been fair, rain having relieved most dry spells in time.

Members are looking forward to the Conference in July and are hoping the North can produce some good weather for the period.

Reported by L. G. Lovatt.

★ ★ ★

SOUTH CANTERBURY

A field day was held in November at the home of Mr and Mrs F. A. Bartrum of Pleasant Point.

A large gathering of beekeepers and visitors representing all sections of the industry assembled in the morning when Mr Bartrum opened the programme with a tour of the honey house(queen raising room and wax rendering plant, etc.

This proved very interesting and visitors were surprised at the design and set up of the buildings and machinery geared for production of honey on a large scale. It is indeed a credit to Mr Bartrum to have achieved so much in just a few years.

A super waxing outfit was demonstrated by Mr Bartrum who put a few supers through to show how effectively it did the job. Next was a demonstration by Mr Davis of a new type of uncapping machine. As the honey to uncap was a bit granulated it was impossible to get the best results, but given normal conditions to operate the machine would be very successful.

Mr H. Clarke of Fairview, N.B.A. President, gave a talk on the new method of cell raising he had seen on his recent trip to Australia. He had a model to show us identical to the Australian, but Mr Cloake said he could not get it to work satisfactorily. However, he also had one of his own design which was giving very good results, and showed frames he had made to set up baby nucs.

Mr R. Bushby demonstrated an ingenious hive barrow which he had patented to make light work of shifting hives and supers, and no doubt we all could make use of such a barrow in our work.

After lunch an inspection was made of the various types of hive lifting devices mounted on trucks. There was a type and size to suit all beekeepers and each was demonstrated successfully as was also the motorised barrow, which Mr K. Ecroyd took over and made a fast run without knocking anyone of the crowd over.

In the honey house away from the wind we had two interesting lectures by Mr I. Foster and Mr V. Cook. Mr I. Foster, who had just returned from a very busy week in Australia, gave us some highlights of his visit and the latest on pollen supplements. We look forward to hearing further items of this trip at a later date.

Mr V. Cook gave a talk on the treatment of bee stings, and all present were helped by his talk and will take his advice to try and avoid getting stung excessively by the use of protective clothing and better strains of bees.

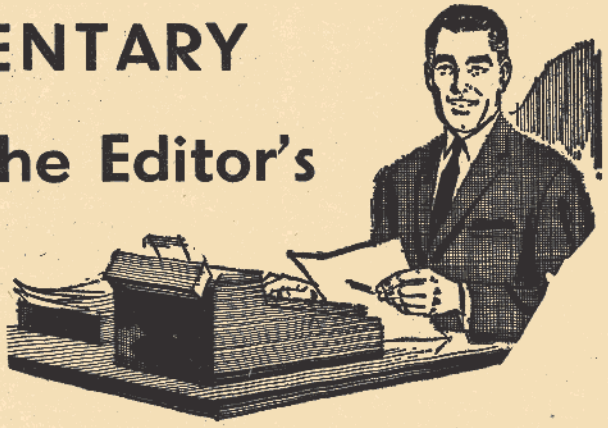
Afternoon tea and a generous spread of food was set out on tables by a willing band of lady helpers who had a most difficult task because of the gusty wind which reached gale force and made conditions far from pleasant.

A hearty vote of thanks to Mr and Mrs Bartrum for their hospitality concluded a very successful field day.

Reported by J. G. McKENZIE.

COMMENTARY

from the Editor's Desk and Mail



This Journal certainly gets around. An interesting letter has just been received from apiarist Stephen Bontcheff, a textile engineer in cotton spinning who keeps 20 hives at Gorna Orehovitza, Bulgaria. Friend Bontcheff reminisces that his father was a pioneer of modern beekeeping in Bulgaria, and in 1907 at Earls Court, London, won a gold medal and diploma in the Balkan States Exhibition for honey and beeswax. Bontcheff senior died in 1946.

A plea is made in the letter "to be excused for my English . . ." which incidentally, is almost perfect. The writer very much wishes that a reply could have been sent with the same fluence in Bulgarian . . . and no plea or excuse would have been necessary. As our Danish friend comments elsewhere, it is a tragedy for the human race that we cannot communicate freely one with the other in a common tongue.

II II II

THE CANADIAN honey crop for 1965 is estimated to total 45 million pounds, an increase of nearly 25% over 1964. Most of the increase was due to bumper crops in Alberta Province, where our bursar will be visiting later this year.

II II II

THERE IS SOME TALK in America about the possibility of changing to the metric system of weights and measures. Beekeepers, as everyone else would have to get used to completely new descriptions in that a one-pound honey jar would become 454 gms and the five pound tin would be just a little over 2.27 kilograms. Package bees would be sold not as two pounders, but as an 0.91 kilogram lot. We over here have yet to digest the dollar and cents system of monetary values, and that won't be so easy for the older generation.

II II II

THE AVERAGE CROP per hive in the Argentine is 88 lbs, almost twice U.K. Production ranges from 15,000 to 30,000 tons per annum, with large areas still unexploited by beekeepers so that, given the market, the overall yield could be much greater.

II II II

BEEKEEPING CORRESPONDENT Henning Christensen of Denmark writes that he had more honey last season than ever before — —200 lbs from 5 hives. The previous year there was no surplus. If bees in Denmark are not able to gather much surplus they know how to swarm. From 13 colonies in spring 1965, the count in Autumn was 45.

CAREERS IN HORTICULTURE is the title of a new booklet produced by the Royal N.Z. Institute of Horticulture, the purpose of which is to present to young people leaving school and university the diverse opportunities that are open to them in both commercial fields of operation and research. Information is given as to educational standards required, and some salaries are detailed in the public service and teaching at the Universities. Whilst the booklet is very well produced and presented, it will not be the fault of the sponsors if little interest is forthcoming from young people who have devoted five years of hard study to obtain their degree as a Master. It seems quite unrealistic that a man or women who completes their studies with a Master's degree at an average age of around 26-27 years should earn the princely sum of £1,100, and they would not doubt recall earning higher sums in menial work during their vacation. It doesn't seem to make sense that the brains of the country should be offered standards of remuneration which are low in comparison with factory and unskilled work. Commercial payments are not detailed, but it is to be fervently hoped that research will pay a salary commensurate with the brain power required. No doubt commercial organisations are well aware of the necessity of adequate payment.

No information is given of opportunities in beekeeping, other than the fact that interested persons may contact the National Beekeepers' Association.

II II II

A BEEKEEPER IN CANBERRA, writing to the Editor of 'The Australasian Beekeeper' points out that he recently found a bee in his hive which was half drone, half worker. At a quick glance, the abdomen of the bee was a drone, but the hind leg of the worker side of the bee had an advanced hairy pollen basket, whilst the drone side was bare. The peculiar speciman was caged for a while for observation, and apart from being clumsy it exhibited its maternal instincts by trying to fan when the cage was overheated.

The Editor pointed out that such bees are known but rare and are classified as gynandromorph bees — half drone, half worker — and that E. B. Wedmore, in his book "Manual of Beekeeping", recommends that a queen producing gyandromorphs should be replaced at once, and no queens should be raised from her eggs, and drone and drone brood should also be destroyed.

The specimen has been added to the freak museum, along with white headed drones and other oddities.

II II II

ACCORDING TO A REPORT from London, Princess Anne is interested in beekeeping to the extent that 20 hives are to be kept at Buckingham Palace and 100 hives at Windsor and Sandringham. She is said to have taken an interest after having been shown some stocks at Balmoral, and that she found the bees such fascinating creatures that she immediately began to study books on the subject. Perhaps it would be advisable for Princess Anne to read "ME AND THE BEE", just published.

II II II

MR A. L. PEARSON of Hamilton, who started beekeeping activities in 1912 is retiring from commercial beekeeping with an aim of devoting at least one day a week fishing. He will, however, retain an interest in the craft by retaining 50 from his 700 hive holdings. Commenting on that bogey of beekeeping — bad seasons — Mr Pearson paraphrases the well known quotaton to read:

"How doth a little busy bee work with all his might,
He gathers honey all day long, and eats it up at night".

II II II

A BEEKEEPERS' CLUB in the U.K. reports that five colonies belonging to members have been killed through dieldrin impregnated candy left exposed as a wasp bait.

II II II

DR. BAILEY, of Rothampstead Experimental Station, England, has reputedly stated in answer to a question at a meeting, that a swarm of bees from a stock

infected with Bacillus Larvae would be most unlikely to carry enough pores to continue infection in their new home.

Dr Bailey is a recognised authority on virus disease in bees, and his research has won world wide acclaim. It would certainly seem that the alleged statement is contrary to accepted practice and to deviate from the facts we believe them, for the spread of the disease is credited to infections from swarms from hives and wild locations. It may well be that Dr Bailey has been mis-reported, and a correction or further guidance published at a later date.

II II II

HONEY PRODUCTION in the U.S. for the year 1965 is estimated to have been 283,000,000 lbs — one per cent lower than the previous year, but five per cent above average. Average yield per colony, based on a count of 5,558,000 hives, was 50.9 lbs.

II II II

MY FATHER was stopped one day in the main street of a country town in England by a policeman who warned him there was a swarm of bees on the next lamp-post. "Perhaps I can help," said Dad, "I'm a beekeeper." He borrowed a ladder and was fortunate enough to remove the queen from the cluster. Concealing her in his hand, he stood for a while at the foot of the lamp-post looking up at the swarm and whistling — a habit of his.

The bees returned to their hive, and in a few minutes the excitement was over. But bees have a way of going back to the same place to swarm. About a month later, Dad was in town again and ran into the same policeman, who greeted him cordially. "I wish you'd been here last week," he said. "There was another swarm on that lamp-post, I did exactly the same as you: I stood there whistling every tune I knew, but it didn't do a ha'porth of good. They were there till dark. —A. E. Snowden in "The Countryman".

II II II

THE BEE RESEARCH ASSOCIATION'S publication "BEE WORLD" reports the appointment of B.R.A. representatives in Canada and New Zealand. Mr. G. Nichols, Ruakura Agricultural Research Centre, Hamilton, is the N.Z. representative who will collate scientific information originating in New Zealand for the international organisation. Congratulations to Mr Nichols on his appointment.

II II II

ONE OF MANY interesting references to scientific work in the same issue of "BEE WORLD" refers to experiments made by Dr R. A. Morse who suggests the reasons for two phenomena familiar to beekeeper.

The fact that bees will remove the top of a queen cell, but are usually reluctant to tear it down completely, seems to be due to the presence in the cocoon of some substance which the bees are unwilling to chew — so only the tip is attacked.

We must have all noticed that a swarm does not generally build comb where it clusters, but does so immediately it is hived. This is suggested to be due to an effect of light on the bees. Swarms kept in the open for several months by the simple expedient of caging its queen, built no comb. But if a large box (with a flight hole) was inverted over it, comb building began immediately and, once started, would continue even in bright light.

II II II

WHAT ARE YOUR CHANCES of a reasonable crop this year and are you satisfied with the season's yield despite thoughtless spraying, incidence of disease, inclement weather conditions etc. Before indulging in self sympathy or recriminations for the acts of others, spare a thought for the Hon. Sec. of the Devon Beekeepers' Association and many others like him. Leslie J. Thoday's average yield from 21 hives was just under 20lbs. Half of the colonies have not had to be fed, but the other half required **1½ cwts.** of sugar to see them through winter. The average per colony for Germany was less than 12lbs. It is patently obvious that beekeepers in Europe do not keep bees for the money to be made and neither do the bees keep them.

NEW SUGGESTIONS and theories are from time to time advanced as to the best way to find the queen when she is wanted, although it invariably seems that the experts find her quickly, whereas the struggling amateur is befogged and often besieged by the mass of inmates. The English publication "BEEKEEPING" reports a sign to be noted which is claimed to make the search much easier:

"Watch the entrance to the hive carefully. Note whether the majority of the bees are flying in by the left hand side or by the right hand side. Smoke carefully at the centre of the entrance. This will divide the bees and when the hive is then opened, the queen will be found in the half of the brood chamber **opposite** that into which the bees are flying. If the bees are using the right half of the entrance, the queen will be using the left half of the brood box and vice-versa.

II II II

THE GERMAN NEWSPAPER "FRANKFURTER ALLGEMEINE ZEITUNG" reports some fascinating discoveries by Professor Remy Chauvin and a colleague Dr Lavie at a research station in Paris working on research into the germs and bacteria brought back into the hive by foraging bees.

Routine tests for flies and other insects is for them to be made to pass through a gelatine meat broth, when a culture of bacteria appears along the track, which can be analysed.

The test when applied to bees, however, was completely negative and although they must have been in contact with bacteria in flight, no trace could be found on the bee's return to the hive.

Further research for this apparent immunity brought forth the discovery that the bee's bodies are covered with an antibiotic which kills all microbes with which they come into contact.

It was also found that the bees smear the frames with another anti-biotic; mix a third with pollen, a fourth with royal jelly, a fifth with honey and a sixth with propolis.

It is suggested that without these newly found antibiotics, life within the crowded hive would be impossible and contagion inevitable.

Maybe these new discoveries can be adapted to the service of mankind. There are many secrets of the hive to be discovered; we are not as clever as we would like to think we are.

II II II

POLLEN TREATMENT is said to be in vogue in Sweden for certain diseases of the prostate gland; 20 - 30 gramms of natural pollen administered in daily doses giving encouraging curative results.

II II II

NO DIRECT REPORT or pix have been received covering the 20th International Beekeeping Congress held in Bucharest on August 26-31. Delegates writing in overseas beekeeping journals, however, are unanimous in their expressions of appreciation of the hospitality of the Rumanian people and for the general organisation of the proceedings.

The Government placed at the disposal of Congress the most important building in Bucharest — The People's Republic Palace — and simultaneous translations were given over headsets of lectures and demonstrations in the language of the delegate concerned.

Adjourning the Congress meeting place, the Rumanian Beekeepers' Association had organised the First International Beekeeping Fair in an area of 150 acres. Rumanian and foreign equipment was exhibited, and installations for use in this age of automation to deal with bulk processing, wax, pollen, royal jelly, liquifaction, homongenisation, filtration, pasteurisation, bottling etc. and the processing of pollen, royal jelly and subsidiary products.

The President of Apimondia, Prof. Eug. V. Harnaj and his organising committee seem to have earned the thanks and appreciation of all present. It is a pity that beekeepers in this hemisphere are prevented from attendance at these fact finding and **instructive gatherings** by virtue of distance involved.

Despite the excellence of the translation services, language difficulties could not be avoided outside of Congress. Henning Christensen of Copenhagen, Denmark, thoroughly enjoyed his visit but relates that during a private and personal sight-seeing trip in the suburbs he became lost. A complete stranger escorted him on two trams and delivered him to his destination, refusing payment or reward, but gratefully accepting a ball-point pen as gesture of appreciation. Henning comments that schools in Denmark teach Danish, Swedish, Norwegian, German, English, French and Latin, yet after a few hours flight by airplane, they were in a country whose language could not be understood. He added that if he could have just one wish granted it would be that the whole world used one language. We would all indeed be saved from many misunderstandings and would be able to enjoy to the full the exchange of ideas, advice and information which originates in every country.

The writer regularly receives copies of the **JAPANESE BEE JOURNAL,** and some of the pictures would indicate some very interesting experiments. But the characters of the language are completely beyond my comprehension and make it impossible for items to be passed on to you to read.

Music of any country can be understood, even if not appreciated; pictures can be seen and enjoyed. It is a tragedy of the human race that we cannot all communicate freely.

II II II

A NEW SUBSCRIBER to the "N.Z. BEEKEEPER" is Mr W. P. Johnson, 352 So. Lombard, Illinois (60148) U.S.A. He writes that if any youngster would like information of schools or pen pals in his area, he will be glad to put them in touch. Beekeeper Johnson is a hobbyist with 30 hives.

II II II

A RUSSIAN inventor, a Mr A. Vovk from the Ukraine, claims to have invented a device to predict swarming. Whether the instrument is elecgtronic equipment similar to the Apidictor is not stated.

II II II

RECREATION.—If you can tear yourself away from emptying supers full of liquid gold and sit down with a pencil and paper for a few minutes, here is an interesting mathematical puzzle ideal for use in finding out the age of your wife's girl friend or anyone else whose age is in doubt.

THINK of a number — any one will do — and add 9. Multiply the answer by 100 (by the simple expedient of adding two noughts). To that total add the date of the battle of Hastings which, for the benefit of the ignoramus, was 1066 and all that. DEDUCT from that sum the year of your birth. The answer, dear, Watson, provides the number you first thought of on the left hand side, and your age this year on the right. And if you don't believe me, here is a specimen computation to convince the unbeliever.

```
  35
   9
 ----
  44   x 100
 ----
4400
1066
----
5466
1939
----
3527
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You do not, of course, warn your victim before-hand that the purpose of the simple sum is to find out whether they are past their prime. Simply ask for the end result of their arithmetic, and thereby announce the number they first thought about, and then their age. Choose your company, of course, and be ready to run.

Department of Agriculture Assesses

HONEY CROP PROSPECTS

for 1965-66

Reports from Apiary Instructors indicate that this season's total honey crop is likely to be about 850 tons more than last season, but below the average for the past six seasons. Following is a summary of the position in districts as at 15 January:

Northland:

The rainfall in Northland has been below average for the year ranging from 17.59 in. less at Whangarei to average at Kaikohe. Temperatures have been below average with cool nights. Crops have varied considerably from very light to near average. The flow ceased before Christmas when wet, cool and humid weather became general. A light flow is again being experienced. Manuka crops are good at Kaitaia but light elsewhere. Overall crops to date are approaching average in Mangonui County, parts of Bay of Islands County, and in Hobson County. In other areas at the moment crops are light. The quality of the honey is good.

Auckland:

The weather in the Auckland District over the holiday period Christmas Eve to January 10, has been the worst for 40 years. In thirteen days 2.65 in. of rain fell and humidity was high. Daily sunshine has averaged only 5.6 hours. Maximum temperatures have not exceeded 70°F. with a minimum of 51°F. Prior to this period prospects have never been better with clover flowering in abundance and pohutukawa bloom the best ever. Crops from this source will still be good but little if any pasture nectar has been added to the crop gathered before Christmas. Crops may still be good but the peak period for this district could have passed. The weather at the time of writing (17 January) is now hot, dry and calm.

Hamilton:

The season opened with reasonably settled climatic conditions and crops from early sources which gave a good build up, were good. However, at our critical time climatic conditions became very changeable varying from fair to poor with cold nights and persistent cold S.W. winds with rain, hail and a few heavy frosts which by the end of November had many colonies in a very poor condition.

Early December opened with conditions more favourable and colonies gained strength and stored average crops for time of year in most areas, but late December reverted back to cold S.W. winds, rain and hail with only odd days suitable for nectar gathering. January appears to be following this pattern, although a few more gathering days have been experienced.

The overall crop is likely to be about average. Honey extracted to date is light colour and good flavour.

Tauranga:

After a cold but dry winter a very settled and warm spring period was experienced with the result that bees built up rapidly on early nectar sources such as Five Finger, Willows, Heath etc.

Windy and cool conditions were experienced during October and November, however, and this restricted the clover and major nectar sources.

During the second half of December conditions settled and it looked like being a good year in most places, however, in early January conditions deteriorated again. Consequently the season is now late.

At this stage average crops are envisaged. With warm conditions some areas might even produce above average returns.

Hastings:

Conditions generally are better than for the corresponding period last year. Bees have been able to steadily work in the pasture over hecent weeks. Some swarming has been experienced. Pasture remains in fair condition but would benefit from warm rain. Coastal hills are drying out, but near the main range it has been too moist as yet. Above average crops are expected.

Palmerston North:

Cool windy conditions have prevailed. Colony strength is uneven and generally down. Clover bloom is adequate and pastures are in good condition. The amount of honey on the hives fiuctuates widely, but overall yield to date is below average. The season is late and an average crop may yet be secured.

Hawera:

A light to medium crop can be expected, unless particularly fine weather is experienced in the immediate future. Due to continual adverse weather condition the usual seasonal build up did not eventuate, and the honey on the hives reflects the overall position to date.

Nelson:

The whole of the district experienced unseasonable weather with a cold snap at the end of December which has affected the honey crop.

On the West Coast long spells of wet weather prevailed and nectar sources have not flowered to any great extent. There was an average flowering of Kamahi but as yet the Rata has not come into bloom. This will mean only a small surplus of honey on the West Coast this year.

In Nelson the rainfall has been adequate although the weather has not been suitable for nectar yield. An average flowering of clover and other pasture sources occurred. Kanuka flowered well and yielded when the weather was suitable.

Marlborough's weather was also unseasonable and the clover yield was affected. Vipers Bugloss and Lucerne are now flowering and could yield well if fine weather prevailed.

The district as a whole can expect to have below average crops.

Christchurch:

Canterbury experienced a cold wet winter and spring which favoured excellent early pasture gowth.

Conditions were unfavourable for the willow flow, and very little honey was gathered from that source — although badly needed for feed. Dandelion bloomed well. Clover started to yield early in December on the light soil areas, and the yield was heavy for the first two weeks; clover on medium and heavy soils came in later. A severe frost in late December caused a complete cessation of nectar secretion from clovers in some areas, however suitable rainfall allowed good growth to be maintained in all but shingle soils. Vipers bugloss, lucerne, thistle and catsear are now showing up well and yielding nectar. The overall crop will be above average.

Oamaru:

There has been very little bee activity during January due to cool, overcast and showery weather. White clover has continued to flower in areas not seriously affected by drought during December, but has not recovered in coastal areas where it had burnt off, in spite of ample rainfall.

Thistle and vipers bugloss are flowering and should provide a light flow during February. Lucerne and catsear are beginning to flower. ⟹ Page 27

DOMINION CONFERENCE

at Whangarei - July 6 7 & 8

THE DOMINION CONFERENCE to be held at Whangarei on July 6, 7 and 8, will meet at the Town Hall, where full facilities will be provided.

The Northland Branch have been busy planning initial arrangements for delegates and further information will be provided in the May issue of the journal. Meantime, the Branch assures delegates and visitors of a very warm welcome and urges them to make their accommodation arrangements NOW whilst there is ample choice of location of hotels, motels, etc. from which to choose, **particularly so since Conference coincides with the visit of The Lions to Whangarei.**

Here is a list of accommodation, with distances from the Town Hall clearly marked. Reservations or requests for accommodation should be made through the Secretary of **THE NORTHLAND BRANCH, MR. A. G. TUCKER,** 35 King Street, Whangarei, using the coupon provided for detailing your requirements.

PLEASE GIVE AS MUCH INFORMATION AS POSSIBLE AS TO YOUR REQUIREMENTS and where possible, specify the hotel or establishment of your choice. Note that a deposit of £1-0-0 per head is required.

LICENSED HOTELS —

Grand, daily tariff	76/- - 86/-	300 yards
Whangarei, daily tariff	66/- - 80/-	200 yards
Kamo daily tariff	58/6	5 Miles
Settlers daily tariff	57/6 - 60/-	400 yards

PRIVATE HOTELS —

Windsor DBB	34/-	¼ mile
Riverview BB	25/-	400 yards
James BB	25/-	200 yards

MOTELS —

Per person. In some cases in off season, weekly tariff reduced

Belhaven 3 units	30/- per night	5 miles
Central Court De Luxe Units	35/- per night £4 minimum	
7 units	30/- per night	1 mile
Regency Motel	30/- per night	1 mile
Whangarei Motel	30/- per night	3 miles
Burwood Motel	55/- per night two persons	6 Miles
Fogdens	30/- per night	4 miles

Hibiscus Motel	30/- per night	1¼ miles
Kensington Lodge Motel	35/- per night minimum £2/5/- 1 person	2 miles
Casa Blanca Motel	30/- per night	1 mile
Anchor Inn Motel	35/- per night reduced over 2 persons	1 mile
Kauri Lodge Motel (due for completion Easter)	30/- per night	1½ miles

MOTOR CAMP CABINS —

Whangarei Falls	By arrangement	3 miles
Tropicana	with	6 miles
Kamo Spa	Proprietors	6 miles

To: Mr A. G. Tucker, 35 King Street, Whangarei.

Please reserve the following accommodation for the DOMINION CONFERENCE.

NAME(S) .....

ADDRESS(ES) .....

Number of rooms ..... single or double beds .....

Date of arrival ..... Date of departure .....

Establishment preferred ..... Deposit(s) enc. .....

YOU ARE AGAIN REMINDED: THE LIONS WILL BE A BIG DRAW AND HOTEL OR OTHER ACCOMMODATION MAY BE DIFFICULT. MAKE YOUR BOOKING EARLY.

HONEY CROP PROSPECTS

for 1965-66 (from page 25)

Yields in South Canterbury and Central Otago will be average to above average. In North Otago the crop is likely to be below average.

A spell of warm, settled weather would improve the prospects considerably. Present indications are for an average crop.

Honey extracted to date is of high quality.

Gore:

After an unsettled spring with heavy feeding in many areas a light honey flow commenced early in December. This was broken towards the end of the month by cold wet windy conditions with snow down to low levels. Unsettled conditions have continued with very few warm days. Pasture nectar sources are very backward in Southland but are more advanced in South Otago. Kamahi and flax flowered heavily but little nectar was stored from these sources. To date hives in coastal areas have not gathered winter stores but inland have stored a light crop. Warm settled weather conditions could improve the present prospects. The overall crop to date is well below the average for the district.

Brews of Mead

Encouraged Beekeepers to meet!

A BEEKEEPING FRIEND in Denmark writing some months ago on the success of their Association's evening meetings, mentioned that there was generally a good attendance and that several members were proud of their prowess as brewers of mead. So proud were they, in fact, that sample bottles were taken for approval or rejection by other apiarists in attendance. How many bottles were approved, and how many were rejected was not stated, but it was interesting to read that such was the fervour of members for their beekeeping affairs, that business concluded at 3 a.m.

How much time was devoted to everyday problems, how much devotion was given to adjudicating the colour and flavour of the contesting meads is a matter for conjecture, but it might indicate an approach and method of gaining interest and support in at least one side of apicultural art!

Perhaps it is well to point out that an English writer some three hundred years ago, one Charles Butler engrossed the opinion: "Good mead is a wine most agreeable to the stomach, as it opens the passage for the spirit and breath and softens the bellies".

Personal experience cannot vouch for the authenticity of softening of the belly or for some of the other questionable attributes therein deliniated, but it can be said with assurance that, properly brewed and decanted, mead is a delectable drink, capable of producing a rose-hued outlook on life and a king-size hang-over in the morning if excess be taken. Conversely, indifferently made without attention to the finer points of wine making, mead is far worse than any home brewed beer yet produced, and capable of producing abdominal discomfort for a number of hours, and departure from home convenience almost an impossibility.

There are a number of tried and tested recipes for producing good mead, some of which are old and devised before the days of chemicals, and others which rely on newer additives to asist with fermentation.

For those who would like to try their hand at wine making, and have sufficient pluck and patience to ensure success, here are two different recipes for experimentation.

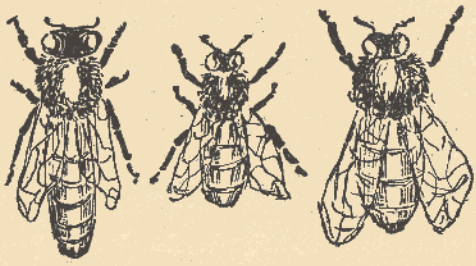
The first is years old and has been used by English mead makers for generations. One difficulty experienced in England is not so likely to be encountered

here, in that it is essential for the fermenting wort to be kept warm and around 60 degrees F. My own particular solution to this problem in the chilly northern hemisphere was to stand the carbuoy containing the precious liquid in the family airing cupboard above the hot water tank. Overfilling the container resulted in a dislodged bung, and the resultent sticky mess on clean linen was not appreciated by the long suffering spouse.

OLD ENGLISH RECIPE — 1 (Ancient)

To 3 quarts of water allow 1lb of honey... 1 white of egg, the thin peeled rind of a lemon, and a little yeast.

Beat the white of egg slightly and mix in a large saucepan with water and honey. Whisk over the fire or stir frequently until boiling. Simmer slowly for 1 hour, then leave to cool until luke warm, and strain into a cask. Stir in the yeast, and cover the bung hole lightly. When fermentation has ceased, close tightly and leave nine months or a year before bottling.



RECIPE 2 — (Modern)

DRY MEAD 3½lbs Honey. Sweet 4½lbs. Honey.

Tartaric Acid 80 grains. Ammonium sulphate 60 grains. Magnesium sulphate 8 grains. Citric acid 55 grains. Potassium phosphate 30 grains.

Boil all above ingredients in three quarters of a gallon of water for ten minutes and skim, then pour into jar or bottle and ferment, and make up total volume of liquid to one gallon by adding boiled water. When liquor is blood heat add piece of yeast the size of a walnut and leave to ferment, having fitted fermentation valve. When ferment is over (in say 6-8 months) bottle off and leave as long as possible, in bottles before drinking.

Whichever method is used, the essentials are that scrupulous cleanliness is followed throughout and that casks or carbuoys are sterilised. Contrary to some opinion that wood is best, glass can be more easily cleaned and sterilised and is not porous. Of no account must vinegar, beer barrels or wine casks be used, though if spirit casks are procurable, they can be ideal.

It must also be emphasised that no responsibility can in any way be taken for premature explosions or resultant damage, or for stomach upsets or blindness for those who cannot wait for maturity before imbibing in their efforts as vintners.

An ideal site for colonies amongst the rape blossom

Beekeeping in China

is a fast growing industry

By Li Chun, Peking

BEEKEEPING HAS BEEN a favourite side-occupation of Chinese peasants from ancient times. Especially rich in nectar are the flowers of the linden tree in the Northeast, of the date and other plants in the North, the rape and clover plants in Central and East China, and the orange, tangerine, lichee and longan trees in the south.

However, beekeeping developed slowly in China in the years before 1949. In fact, in that year there were only about half a million colonies of domesticated bees in the whole country.

Due to the attention paid to beekeeping the number of colonies had risen to 3,000,000 by the end of 1963. Except for a few colonies of Italian and Caucasian breeds, all are Chinese breeds of bees. They fly fast and possess strong nectar-gathering power.

Most Chinese bees are still reared along traditional lines and the yields of honey are small. In recent years, improved methods have been introduced in many places.

A conference was called by the Ministry of Agriculture last year in Tsunghua County, Kwantung Province, to study the county's successful experience in using modern movable frames. The beekeepers there had achieved a considerable increase in both the number of colonies and the yield of honey per colony.

Other places have also achieved success in using movable frames. A beekeeper in Yipin County, Szechwan Province, has lifted the annual per-colony yield from 15 kilogrammes to over 100 kilogrammes.

A survey of Chinese bees has been made with a view to breeding good strains suitable to local conditions.

New Breeds

Several species of wild bees, some as big as wasps, others as small as houseflies, have been discovered in South and Southwest China, and they are being studied.

Increasing attention is being given to the effect of pollination by honeybees on the fields of various crops. In some areas bee pollination has been found to bring an average of 20 to 30 per cent increase in crops of rape, sunflowers, buckwheat, cotton, pumpkins and fruit trees and in addition, to improve the quality of the seed.

Although apiculture goes back to antiquity in China, no scientific research was applied to it until after 1949. The Beekeeping Research Institute was set up in Peking in 1958 by tablished a research centre in Foochow. Progress has been made in summing up the peasants' experience in beekeeping, improving beekeeping apparatus, preventing and treating bee diseases, breed selection and the processing of honey.

The mite Varroa Jacobsoni Oudemans that destroys whole colonies of bees, is being dealt with effectively by the application of certain insecticides combined with better management of the colonies.

Atificial insemination of bees, hitherto a neglected art in China, is making successful new contributions to Chinese apiculture.

Bee venom and royal jelly are now used for medicinal purposes. Before 1960, only honey and bees wax were used.

There is now a magazine devoted to apiculture. It provides a means of exchanging experience and has been warmly welcomed by beekeepers.
the Chinese Academy of Agricultural Sciences. In co-operation with the Fukien Agricultural College, it has es-

This is how we move bees into the fields.

A Special Story for Beekeepers

THE BUSHMEN'S REVENGE

By Arthur Davis

Papanui No. 1 R.D., Taihape.

The two bushmen hastily finished the new set of skids. By now the stock of logs at the mill would be almost exhausted. No doubt, the mill hands were clapping on the speed in an effort to overtake them. It had always been like this. Whenever anything happened to hold the bushmen up the mill output would rise from five thousand to six or even seven thousand board feet per day. Not that the bushmen intended to be overtaken. Far from it. The thought of the mill braggarts boasting over such an event wouldn't bear thinking of, but each of the two bushmen knew that he'd be hard put to prevent such an occurrence this time.

The white pines stood so thick near the skids that it was difficult to pull a saw between them. The "breaker-out" had cleared a track up to the stand by the time they had knocked the first tree down and the bullocky could already be heard calling to his leaders as he made his way up the track. The "trammie" was at the skids with his tandem-yoked horses ready to load the logs on to the tram. He offered nothing in the way of encouragement.

"You bush rats had better get your shirt tails cracking," he said. "The last log was going on to the breaking down bench when I left."

"She'll do three eighteens," said one of the bushmen standing the measuring stick up against a nearby tree. "We'll have to knock another down for a load."

The other bushman said nothing. He very seldom did say anything. To him words were precious things not to be flung lightly to the four winds where they might never be recovered. He preferred to let his mate do the talking. He reckoned he was better at it. They were an odd pair. One was short, thick-set, heavily muscled, and bald. The other was tall and lean with a shock of sun-bleached hair that hung down over his ears, then curled round and began to grow up again as if seeking the sunlight like the trees in which they worked. Each month he went to town with the intention of getting his hair cut, but something always intervened to prevent it so that the following day his mate would what he called "knock it about a bit" with an old pair of blunt and useless scissors.

Now, in spite of the differences between them, these two bushmen thought the same thoughts at the same time, particularly when using the crosscut. It was as if the thought processes of one were able to travel along the band of steel and occupy the mind of the other. Of course, they never knew who was influencing whom. This transfer of thought had gone on for so long now that neither saw anything unusual in it. They never spoke about it any more.

The two bushmen walked along opposite sides of the log each holding the handle of the crosscut. They set the saw teeth down on the axe mark indicating the first eighteen feet.

"Reckon she's straight?" asked the voluble one, squinting along the saw. The other didn't reply. He saw no need. Bushmen of their standing didn't cut crooked cuts.

With long, easy swinging strokes the saw ate into the soft wood. They only stopped once to tap a wedge into the saw cut to keep it open and then

continued on until a soft little pop and a settling of the tree trunk indicated they were through.

The "breaker-out" threw his timber jack in alongside the log and jacked it clear so that he could snipe the end and drive the side dogs to take the hook of the single hauling chain that ran down between the pairs of bullocks.

The bushmen were interested in none of this. The second and third logs were cut off before the first had reached the skids. By the time the second was on its way the front scarf was cut in the next tree and the bushmen were backing it up with the six foot crosscut saw. This tree stood perfectly plumb on its stump and was not expected to break much wood.

"How much wood are you holding?" asked the talkative one.

"Coupla inches," answered his mate. "Better stick a wedge in her."

The other took the broad bladed backing up wedge and drove it into the saw cut with the maul. The tree shook visibly and took a decided lean. He struck another blow for luck and got the surprise of his life when a *bee* plummeted down from a knot hole and stung him on the top of his bald head. He became vastly excited and sprang off his jigger board and dived into the undergrowth. From this haven he called urgently for help.

"Get the sting out," he pleaded. "Mind you don't squeeze the poison in."

His mate strolled over to where he was peering apprehensively through the foliage as if expecting further attacks. His mate had no fear of bees. He peered professionally at the sting before briefly sterilizing the face of his axe by wiping it on the leg of his trousers. He then deftly scraped the sting clear with the razor-sharp blade.

"Got yer fair in the centre of the think tank," he said.

It would appear that the axe had the same power of thought transference as the saw, because both were struck with the same idea without a word being spoken. Broad smiles appeared on both weather-beaten faces. The silent

one became almost loquacious.

"You wedge her over while I get a plug of clay ready," he said.

The other bushman didn't fancy this job much, but he liked the other even less, so he sneaked up to the tree, struck the wedge a tremendous blow and fled back to the undergrowth again. After several such efforts the tree gave a tremendou scrack and began its apparently leisurely journey towards the ground. A moment after it struck with an ear-splitting crash, the bushman dived into the still-falling debris, and blocked the hive-entrance with his ball of clay. A few bees who had emerged on impact buzzed about frantically seeking entry, but the bushman cut a leafy branch and laid it over the plug. The bees obligingly crawled into the foliage and were lost from view. Others returning to the hive formed a small cloud high in the air where the knot hole had been.

The two bushmen set about with a will. They had two saw cuts to put through "before," as they put it, "those log-hauling louts got back from their last trip to the skids with the butt log from the previous tree."

When the log-haulers arrived, not only was the log ready but the bushmen were quite helpful. With their assistance it was broken out and on its way to the skids in record time. No "mill rats" were going to gloat over their causing a break in production, they said. They watched it loaded on to the tram and chuckled gleefully when the trammie spread his butterfly cape over the clay plug and seated himself upon it before clucking to his horses to start them on their journey to the mill.

After he had gone the bullocky unyoked his team and he and the breaker-out set off back. They were finished for the day. The bushmen cut a few more logs but their hearts were no longer in their work. They were waiting for the "knock-off" whistle to blow, or rather they were waiting to see if it did blow. Under normal circumstances its shriek would shatter the stillness exactly on the hour. Farmers out on the clearing would set their watches by it. It would be heard four times a day when the mill was cutting and it was never wrong. The chap who blew it, tended the mill boiler and lived only for his fire, his head of steam and his whistle. He was at his happiest when the steam was screaming out of the safety valve and the guage needle touched one hundred and twenty pounds.

When the bed of embers glowed six inches deep along his fire bars and the water sight glass showed the boiler to be a quarter full, he permitted his gaunt frame a little rest from the scaring heat and gazed with satisfaction at his watch hanging from a nail on a beam beside his neatly framed second-class ticket in steam. In an hour, a minute or a moment he would be able to display his unique artistry on the lanyard of the whistle. Anybody could give the thing a tug and it would roar obligingly but not other hand was able to bring in the weird dying note to the blast that went on and on growing ever fainter, until the listener was unable to tell exactly the

moment it ceased. This dying note was the cry of anguish from the spirits of those who had crossed the boilerman's path during the day and had been contemptuously consigned to the flames.

Up in the bush, the bushmen came and went and no signal came from the mill. At a quarter past they grinned broadly. "Guess she worked," said the silent one.

They gathered their tucker bags and set off down the tram track. About half-way home they met the mill boss.

"Oh," he said sarcastically, "here comes Charlie Chaplin and Al Capone. Whose bright idea was it to send in the log with the bee hive in it?"

Of course, they knew the answer to that one.

"What beehive?" they asked almost together.

"Was there a beehive?" asked the talkative one. "We never saw no beehive, did we Bert?"

The other shook his head.

"Funny we never saw it," he went on wonderingly, "because where there's a beehive there's always bees. 'Ave you noticed that? They come out in thousands when the tree hits the ground. P'raps they were all knocked out with the crash."

The silent one stopped kicking idly at the sawdust ballast between the sleepers and took his pipe from his mouth disclosing a tooth worn down to half the length of its fellows through champing its way through innumerable pipe stems. It was evident he was going to speak.

"We might've been stung," he said plaintively.

The boss was not a tolerant man. He cursed the two bushmen briefly and to the point before striding back down the track to his house—on his way making a big circle round the mill.

When the two bushmen reached the mill, they found the place deserted except for one figure toiling wraith-like in a cloud of steam from an open cock. It was the stoker assembling a steam hose to deal with the bees that had given up all hope of repairing their hive and were intent only on revenge. The log from which they were issuing at any movement, lay upon the breaking down bench with the first flitch lying beside it. This first cut had opened up the hive from which honey dripped into the sawdust below.

Bees swarmed throughout the mill and occasionally penetrated the stoker's smoke screen only to have their spirits condemned to the flames.

The two bushmen thoughtfully watched his efforts for a while before setting out for the row of whares in which the workers lived. It was here that they met their first *blue man.*

He was groping his way to the cookhouse, his face so swollen that his eyes were fast becoming mere slits. Somebody had daubed him generously with a blue bag. The bushmen hurriedly washed and then they, too, followed him for their evening meal It was a sombre repast. Diners plied knives and forks clumsily with their pudgy hands and peered closely at their plates in an effort to locate their portion. Some who had become completely sightless, contented themselves with mugs of tea which by dint of long practice they were able to manage without the gift of sight. One thing they had in common. All were painted the same ghastly shade of blue.

The bushmen alone were gay. They ate their way through their own rations with speed and collected those of the more handicapped and ate them as well. The talkative one talked all the time, advancing theories as to how the bees got into the mill unnoticed and even more ingenious theories for getting them out again. The mill hands said little excepting those who still retained some sight, and these made pointed remarks about the bump on the bushman's bald head which had already drawn his eyebrows up into an alert, startled expression.

"The bump on me nut?" said the bushman happily. "Oh, *that*—that's nothin'—I just got clobbered by a falling branch, that's all."

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An excellent library of books which belonged to Mr H. R. Busch of Hornby, Canterbury, has just been purchased by the Library Committee. This library consists of over one hundred books plus a collection of pamphlets. Some are by authors who are still writing, while others have a considerable historical value and a value to students. Quite a few were published in the 1800's, including a translation of Hubér's Treatise dated 1808. These books are now being catalogued and will shortly be available. Beekeepers of today and the future will appreciate the generosity of Mr. Busch in making his library available at a very reasonable price.

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Hon. Librarian.

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THE N.Z. BEEKEEPER

This Journal is issued free to all beekeepers in New Zealand having 30 or more registered hives, and to others who are members of the National Beekeepers' Association.

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 preceeding publication.

Nom-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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Front Page Story

Who's afraid of the big bad wolf?

According to the popular story of nursery fiction it was the three little pigs who feared the fangs. There is no question, however, but that the little lady in our cover picture is not afraid of buzzing bees or stabbing stings.

Three-year-old Nadene Glenda Pullin, daughter of multi queen rearer, wax processor and apiarist Ivan Pullin whose plant is in the Auckland suburb of Mount Roskill, thought that a little smoke and gentle persuasion would be a good thing to help father shift some recalcitrant inmates away from the hive lid.

This picture was taken some time ago, and Nadene has been brought up and reared on a liberal diet of honey, stings, wax and propolis. She has thrived and grown into a lively bonny girl without fear of proverbial hot feet or buzzing wings.

Perhaps the blood line of her father and grandfather before her — steeped in apiary management and bee lore—explain the reason for negligble reaction to stings, despite her tender age.

Much of father Ivan's refined wax finds its way into cosmetics for the female of the specie, hair cream for the male and medicinal preparations for both parties.

It is interesting to relate that Ivan sited his plant in Mount Roskill 30 years ago "to be on the edge of the bush, yet near to the city . . ." It's still near to the city, but there's precious little bush.

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