



BEEKEEPING IN TARANAKI

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A LONG with the development of dairy and sheep farming on the grassy plains surrounding Mt. Egmont in Taranaki came the growth and expansion of the beekeeping industry. Although some of the pioneer commercial beekeepers who are still active in the occupation began beekeeping as early as 1909, it was not until Mr. W. F. Lenz brought 400 colonies of bees to south Taranaki in 1914 that several men were encouraged to extend their hive holdings to a full-time occupation and as a sole means of livelihood.

to support a 400-hive outfit without some encroachment on the areas at present worked.

The logical conclusion is that because of land development, more pockets of good territory will become available and the industry must continue to expand.

Climatic Conditions

The climate of Taranaki is largely governed by the mountain and the altitude above sea level. There is a very great difference in rainfall and temperature between areas near the sea coast and on the central upland. Westerly winds sweep in from the sea and because of the rise of the land, shelter is effective only for a very limited distance. Very heavy losses of field bees during spring are caused by these almost-incessant strong winds. The north-east side of the mountain appears to be much better sheltered. The spring is cold and changeable with short periods of fine weather between rains. Periods of rainfall continue through the summer and spells of consecutive warm sunny days are of comparatively short duration. Weather conditions may be general or local; rain may be falling at Stratford while New Plymouth on the other side of the mountain may have sunshine. Droughts comparable with those of Hawkes Bay are unknown in Taranaki.

Topography

Both the climate and topography of Taranaki are unusual. The plains rise from approximately 100ft. at the sea coast to 2000ft. at the edge of the mountain reserve. Numerous streams which have their sources in the mountain radiate from it like the spokes of a wheel. Although there are times when prolonged heavy rain falls on the mountain, no general flooding of the countryside occurs owing to the

A MEETING was convened at Hawera in 1908 for the purpose of forming a beekeepers' association. The newly formed South Taranaki Beekeepers' Association began with a membership of 21 beekeepers. At the end of a year the number had increased to 30 and continued to multiply until the second year, when the association had the largest membership in the Dominion. In 1914 the association joined the National Federated Beekeepers' Association of New Zealand.

Organised Marketing

Some of the credit for organised marketing also appears to be due to the efforts of south Taranaki beekeepers in forming in 1913 the New Zealand Honey Producers' Association with a capital of £3000. With the establishment of the association the first advance payment for honey was 3½d. per pound.

Expansion of Commercial Beekeeping

These co-operative movements were a stimulus that attracted more men

to the industry. After the First World War several returned servicemen took up beekeeping as an occupation and have continued until the present.

At least two men started each with a capital of £100 and succeeded in building up to full commercial status without borrowing money. Commercial apiaries were soon established in all the 10 counties surrounding the mountain. A large part of the province is in grass, not much cropping being done, and on these grassy plains are located 346 apiaries containing 10,140 hives, an average of nearly 30 hives per apiary. There are 15 full-time commercial beekeepers and another 7 apiarists owning over 100 hives in the province. The area worked by each commercial beekeeper is approximately three-quarters of a county. Though no new areas have been taken up by beekeepers in recent years, the steady increase in the hive holdings of already established beekeepers will probably continue for a long time. The territory is by no means fully stocked with bees, although there are no unoccupied areas of sufficient extent

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Boxthorn hedges used for shelter on the Waimate Plains.

quick get-away, so that there is no flood hazard for beehives. The soil is mainly a light volcanic ash which is fertile, sweet, and porous. It allows a quick response in growth to sudden warmer conditions.

A network of roads which are mainly tar sealed gives good access to nearly every part of the province.

Shelter

The lack of major shelter in south and south-west Taranaki has been due mainly to the devastating effects of the salt-laden winds from the sea. About 45 years ago Taranaki experienced one of these extreme winds, which burnt up practically all exotic shelter trees. An African boxthorn hedge (*Lycium ferocissimum*) growing near the main road at Riverdale which survived this storm demonstrated the suitability of this species for the coast.

Since then it has become very popular as a low shelter and impenetrable hedge and farmers have planted hundreds of miles of these hedges, plantings of the species far exceeding those in any other district in New Zealand. The greatest concentration of these dual-purpose hedges is in the Waimate West County. From about midway between Hawera and Eltham

boxthorn hedges are replaced by barberry hedges (*Berberis vulgaris*), and these extend around the inland side of the mountain to within a few miles of the north-western coast. There are some well-established plantations of *Pinus radiata* and gum trees and some handsome clumps of native bush between Stratford and Waitara. Many shelter belts of *Pinus radiata* and macrocarpa have been planted in south-western Taranaki in recent years and the beneficial effects will be felt progressively by those keeping bees in this area.

Type of Equipment

Fortunately for Taranaki beekeepers the pioneers of the industry began with good well-made hives which were properly painted. Those who followed appear to have maintained this standard of quality. Every commercial beekeeper in the province has manufactured his own hive parts. Hives are almost universally set in pairs on two 3in. x 2in. runners which are fixed to four stout pegs driven into the ground. This set-up has much to commend it, as hives standing upright on an even foundation not only are testimony to the hand of the skilled workman but the supers are not likely to get out of alignment as do those in hives on the ground after settlement

takes place; their combs also remain in proper shape.

Although a few beekeepers have in the past dipped hives in paraffin wax, practically every commercial apiarist today is using a lead and oil paint for apiary equipment. Much of the well-painted hive equipment made by the early beekeepers is still in service. Unsightly hives covered with tar and kerosene or motor sump oil are a rarity in Taranaki.

The majority of hives are made to the dimensions of the standard 10-framed hive, but a few beekeepers in south Taranaki have used a 12-frame hive for many years and they have developed a system of management applicable to the large hive. The departure from the Dominion standard does not appear to have given any over-all advantage and returns of honey per hive do not exceed those of neighbouring beekeepers using standard equipment. It is mainly a question of adjusting the system of management to suit the large hive.

Most of the honey houses are built on the gravity principle, although a few of the latest buildings are of the level-floor type with a honey pump installed. Beekeepers have not yet built such adjuncts to the handling of honey as a warming room, drying unit, or cooling compartment.



An apiary in the shelter of a boxthorn hedge.

Comb Foundation Manufacturing

In addition to honey-extracting equipment a beekeeper in south Taranaki installed a comb foundation manufacturing unit in 1909. In later years the older type of embossing rollers were replaced by root mills and these are still in operation. This factory can process $\frac{1}{2}$ ton of comb foundation (8400 embossed sheets) per week. The usual demand is for $7\frac{1}{2}$ sheets to the pound. Beekeepers in the district have been able to send in their bulk wax for conversion to comb foundation and thus effect considerable savings. Not only has this factory met the needs of the province, but it has also been of service to beekeepers in many other parts of the North Island.

Strain of Bees

Black bees were the original race and may still be found in large numbers in the more isolated districts of northern Taranaki. Beekeepers, especially in the districts surrounding Kaponga, have persistently bred pure Italian bees for many years without introducing new blood and have developed a very docile yet good honey-gathering strain equal to any in New Zealand. Taranaki bees have generally been bred to a high standard and possess most of the desirable qualities.

Beekeeping Methods

The adverse climate and the very limited natural source of nectar supply make it necessary for beekeepers to feed their bees very heavily, often into the early summer. In some seasons colonies have required as much as $1\frac{1}{2}$ tons of artificial food per hundred hives to maintain them until the clover flow in December.

In recent years more use has been made of comb honey (mainly manuka) in place of sugar for feeding and it

appears to be satisfactory. The damp winter atmosphere does not appear to have any detrimental effect on stored combs of honey.

Owing to sudden changes in the weather, supers must not be added much in advance of requirements. Another problem is the control of hive strength. Strong colonies may be in a condition conducive to swarming when a strong westerly wind will so deplete the hive of field bees that they would appear to have swarmed. On the other hand if the weather remains

fairly calm, swarming is difficult to control. Possibly Taranaki beekeepers give their colonies more attention in spring than is necessary in other parts of the Dominion. Very little if any use has been made of modern hive-control methods such as the queen excluder, two-queen system, and escape boards. The lower altitudes near the coast should be quite suitable for at least some modification of these systems with the standard hive.

Another condition that the inexperienced man would not expect is that colonies located near the mountain, where the climate is rigorous with cold down draughts from the snow, will winter only in strong two-storeyed units.

Main Sources of Nectar Supply

Although there are many nectar-yielding plants, the main honey flow comes from white clover. Taranaki honey has a flavour peculiar to the province. This is mainly due to the soil type. In a favourable season the whole of the plains is carpeted with a white and green sward of clover. In contrast to the slower reaction of clovers on clay soils not more than 3 or 4 days of warm, sunny weather are required for the clover to react and freely secrete nectar on Taranaki soil.

Next in importance to clover is blackberry, which grows on waste places, on the banks of streams, and on the less developed lands of high altitude. The honey is greyish-white and has a distinctive and excellent blackberry flavour.

Other pasture sources are catsear, hawkweed, and *Lotus major*. Surplus honey is also secured from rewarewa,

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Hives in pairs on hive stands.



Section of apiary containing 12-frame hives well sheltered by silver poplar trees.

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kamahi, and rata. Under favourable conditions boxthorn will also yield a surplus. When the weather has been dry the leaves of the boxthorn will fall; then a good downpour of rain will start a new growth, the flowers of which will often yield nectar heavily. The maximum that has been recorded from this source is 17lb. in 1 day during a late autumn flow. The honey is easy to extract, but has an unusual amount of moisture to be evaporated out. It granulates very smooth and makes an excellent starter. The colour is water white and the flavour is very acidic and inferior to that of clover honey. One season a beekeeper extracted 15 tons of this honey in May. Spring nectar is very limited in the pasture areas. A little is gathered from tree lucerne, willow, and barberry. The dandelion and scotch thistle, which were so common in Taranaki years ago, are now of little importance as nectar sources. Northern Taranaki honeys usually have a little more colour, but the flavours are excellent. The occurrence of buttercup, pennyroyal, and ragwort is negligible.

Honey Crop Returns

Honey producing in Taranaki is a somewhat precarious occupation. Seasonal returns fluctuate from very near total failure to occasional bumper crops. Failures are usually due to too much rain with low temperatures and on some occasions drying winds, especially near the coast. Men with many years of experience seem to have got about Dominion-average returns fairly consistently, but the less experienced do well to get 2 tons of honey per 100 hives. Taranaki may not be

a high-production area for honey, but one redeeming feature is that the high-quality product will always sell.

Markets

Taranaki beekeepers can dispose of practically all their honey on the local market. Darker honeys from outside districts could not compete with the high-quality local product.

Boundaries

Almost every larger town in the province is the headquarters of a commercial beekeeper, but the apiaries are distributed over all the good clover pastures in the province. To avoid overstocking some areas and bypassing others beekeepers have by mutual agreement defined their boundaries so that each could establish apiaries in the territory nearest to his headquarters.

Foul-brood Situation

In the early days of beekeeping American foul-brood disease (*Bacillus larvae*) had got such a hold that 90 per cent. of apiaries were infected and it required a united effort by beekeepers to get it under control. Now the disease has been so effectively dealt with that only about 1 per cent. of the total hives have been infected each year. There are large areas in south Taranaki that have been completely free from foul-brood for the last 15 years and it is hoped that the vigilance of beekeepers will keep them so.

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Bursaries for Agricultural and Scientific Study

THE Public Service Commission offers annually on behalf of a number of Government Departments a limited number of bursaries for competition among boys and girls leaving post-primary schools. The bursaries provide for full-time university study as a preliminary to professional careers in science or agricultural science with the Departments of Agriculture and Scientific and Industrial Research and the Air Department (meteorological office).

Under this scheme the Department of Agriculture selects bursars for careers in two main fields, extension work and research. For extension work (B.Ag.Sc. degree) ultimate appointment will be as Instructor in Agriculture with the Department's Extension Division.

The main job of the Instructor in Agriculture is to keep in close touch with the farmers in his district and pass on to them the latest advice and information, more generally in relation to pastures, crops, and general farm management.

Research Work

In research work graduates with B.Sc. degree (and some with B.Ag.Sc.) are employed with either the Animal Research Division or the Extension Division. In the first division work is mainly on the investigation of animal disease at the Wallaceville Animal Research Station and on breeding, nutrition, and general management at the Ruakura Animal Research Station. In the Extension Division employment is mainly with the Rukuhia Soil Research Station, which works on problems of soil fertility and the maintenance and improvement of pastures and crops.

While at university bursars have their tuition fees and text books paid for and receive a cash allowance of £70 for the university year. This is increased by £40 if a bursar has to board away from home.

The entrance standard is high. Applications will be considered only from boys or girls who have passed the Special Bursary Examination or the University Entrance Scholarship examination.

Additional bursaries are offered under a separate scheme for cadets wishing to become Horticultural or Apiary Instructors.

Full details may be obtained from the Personnel Officer, Department of Agriculture, P.O. Box 3004, Wellington.

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METEOROLOGICAL RECORDS FOR JULY

Station	Height of station above M.S.L. (ft.)	Air temperatures in degrees (Fahrenheit)				Rainfall in inches				Bright sunshine hours	
		Approx. mean	Difference from normal	Absolute maximum and minimum		Total fall	No. of days of rain	Difference from normal	Maximum fall		
				Maximum	Minimum				Amount		Date
Kerikeri	201	52.4	+ 2.4	67.0	32.5	1.47	15	- 4.11	0.67	13	
Auckland	160	51.4	+ 0.1	62.4	38.5	1.57	11	- 1.10	0.50	13	155.1
Tauranga	10	49.3	+ 0.9	62.9	31.2	3.96	9	- 2.45	2.14	1	171.3
Ruakura	131	46.4	- 1.4	62.0	23.3	2.39	9	- 2.51	0.56	13	145.6
Rotorua	980	45.9	+ 1.3	61.0	26.0	2.47	8	- 2.85	1.15	1	149.2
Gisborne	12	49.0	+ 1.4	65.6	33.9	7.18	17	+ 2.85	4.75	1	122.9
New Plymouth ..	160	49.0	+ 0.4	60.5	33.5	2.66	12	- 3.66	0.59	8	137.8
Napier	5	48.0	+ 1.2	64.9	28.1	3.07	11	- 0.48	2.27	1	152.1
Talhape	2157	41.2	+ 0.2	57.0	26.6	3.38	12	+ 0.31	0.84	15	
Wanganui	72	47.3	+ 0.5	63.0	30.2	3.91	12	+ 0.65	1.33	14	139.4
Palmerston North	110	46.0	+ 0.5	61.8	25.2	2.46	14	+ 0.65	0.66	14	126.4
Waingawa	350	44.2	+ 0.1	61.5	23.6	3.34	14	- 0.78	0.69	24	120.0
Wellington	415	46.6	+ 0.3	57.8	32.6	6.26	14	+ 1.17	3.25	14	92.1
Nelson	24	45.4	+ 0.1	59.2	28.8	1.70	7	- 1.73	0.80	8	178.1
Blenheim	12	45.2	+ 0.7	62.7	24.9	1.70	5	- 1.03	1.12	14	187.0
Hokitika	12	44.2	+ 0.5	60.8	26.0	10.99	13	+ 2.28	4.02	23	112.4
Hanmer Springs ..	1225	39.1	+ 1.0	61.6	15.0	4.99	12	+ 0.73	0.95	14	120.9
Christchurch ..	22	43.2	+ 1.0	64.0	25.4	2.64	12	- 0.72	0.82	14	116.6
Ashburton	323	40.8	+ 0.7	63.0	21.4	1.86	12	- 0.79	0.80	14	115.0
Timaru	56	41.6	+ 0.3	56.2	22.2	1.82	4	+ 0.09	0.67	23	118.0
Alexandra	520	38.1	+ 2.2	59.0	22.0	0.40	9	- 0.25	0.11	16	115.1
Taiari	80	42.0	+ 1.0	64.4	20.4	1.38	15	- 0.75	0.28	16	86.3
Invercargill ..	32	42.6	+ 1.9	56.0	22.0	2.40	21	- 0.60	0.23	12	78.3