

Papers Presented Before

THE CORNELL APIS CLUB

Fall Semester 1924 - 25

Title	Presented by	Date
Francois Huber	Everett Oertel	October 10
L. L. Langstroth	H. A. Merrell	October 24
Moses Quinby	P. R. Needham	November 14
Charles Dadant	E. J. Anderson	November 28
Dr. C. C. Miller	E. F. Phillips	December 12
A. I. Root	R. B. Willson	January 9
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Isaac Hopkins
by R. L. Parker

Isaac Hopkins settled in New Zealand in the year 1865, coming from England. He did not, however, introduce the honeybee to the islands, this having been done in 1839 by missionaries. Later he was one of the first to introduce Italians as well as other races of bees. The common black bee was introduced into New South Wales, Australia, from England in 1822 and from here was disseminated over the island. Italians were probably introduced in 1862. From New South Wales the common black was introduced into Tasmania in 1831, and Italians were brought from the same colony in 1862. The introduction of bees to New Zealand was in 1839 from England and 1842 from New South Wales. Italians were imported from California in 1880 by a Mr. Harrison and Isaac Hopkins. In 1883 Hopkins imported Italians from Italy, Swiss Alpine, Syrian, Holyland, Cyprian and Carniolan bees.

Modern beekeeping began in Australasia in 1878 when the Langstroth frame hive, the honey extractor and comb foundation were introduced by Hopkins. He drew the attention of the beekeepers to the improved system of bee management in a series of articles in the press. Later letters were received by him from all parts of the Australasian Colonies asking for farther information, which was subsequently supplied in the first edition of his Australasian Bee Manual.

One of the older beekeepers, Rev. W. C. Cotton, published a few rules in 1844, entitled, "A Few Simple Rules for New Zealand Beekeepers", they were as follows;

"1. Be anxious to increase your stock at first rather than to take a large quantity of honey.

"2. Get well acquainted with your bees, and make them acquainted with you. Handle them gently, and do not blow on them. Leave them alone when they are cross.

"3. Always in swarming time have a spare hive at hand.

"4. If you have boxes to pile one on top of the other, never disturb the lower box, except when, after two or three years, the combs have grown old and want renewing; then, late in the autumn, when the breeding season is over, take the combs away from the lower box instead of the second."

"To Take Honey"

"5. Take off the cover, blow some smoke into the upper box between the bars to drive the bees into the lower box. Have a table ready, with a cloth upon it; lift the box on to this, and carefully cut out the outside combs, stopping directly you come to those which have brood in them. Return the box with the brood-combs undisturbed. This may be repeated as often as you see through the window (of the hive) that the honeycombs are sealed over.

"6. After the breeding season is over all the boxes except the lower one may be entirely emptied in situations where, as at Paihia, the bees work through the winter.

"7. Keep a stock book regularly, and write down immediately anything curious which is observed."

These rules were probably the best at the time and the system of management advocated was a great advance over the sulphur pit method. The keeping of a record book for the apiary holds good and will probably always be so. Later the bar hive was introduced in which it was necessary to cut the ends free before removing the combs. But all the while and up to the year 1880; sulphuring of bees was still practiced. The keeping of bees in mov-

able frame hives was begun about 1880 and was not completed until 1909 when the Apiaries Act was passed making it unlawful to keep bees in a hive without movable frames.

The honey market when Hopkins first came to New Zealand (1865) was very poor. The only honey for sale at the time was that hawked by the older Maoris, it being in old kerosene or some other used tins. "A conglomeration of honey, wax and bee grubs (the latter was considered a delicacy by the older Maoris) all mixed together, usually obtained from the bee nests in the brush, which were plentiful in those days. Occasionally strained honey, free from wax, etc., would be offered, but as it was generally believed (and with good reason) that the straining cloths used by the Maoris were parts of discarded blankets that had served as body wrappers in the heyday of their usefulness, the vendors found very few customers among the older colonists." The first honey which was properly put up for market in tins appeared in 1868. It was horrible stuff wherever it came from, in the opinion of Hopkins, the nauseous taste made him remark: "If that is honey, I never want any more of the so-called 'Nectar of the Gods'". He later discovered the true flavor of honey after he became a beekeeper and produced it himself. The method of taking honey in the first commercial apiary of New Zealand was to cut out the honeybombs from the boxes and dump them into a large tank, in which probably a strainer had been fixed, to drain. When the draining had nearly ceased a man tramped about on the combs to press out as much as possible of the remaining honey. It was then marketed in small tins. In those days, 1870, honey was used more for a medicine than for a food being fed to children as a medicine with borax.

European beekeepers at about this time were endeavoring to improve upon the old wasteful methods and to some extent succeeded. Hopkins gives the greatest credit for improvements along this line to American beekeepers, the movable frame hive and comb foundation being perfected in America. The beginning of modern beekeeping dates from the perfection of comb foundation in 1877. When Hopkins first began beekeeping in 1874 he knew nothing of the advances made in other countries. Although reading everything possible to glean some knowledge of new methods, he could get no information that would guide him beyond a "gin-case" hive --- the first kind which he adopted at his home at the Thames. He was very anxious to learn new and better methods for he thought that "bee-farming" had great possibilities in New Zealand as the country seemed well adapted for it. His intimate friends had the impression that he was "really going off his head" because of his enthusiastic talk of taking up the bee business and raising tons of honey.

The first movable frame hive was one sent from California in 1876 to a friend of Mr. Hopkins. Mr. Hopkins used two duplicates of this hive, but found them very unsatisfactory. It was the von Berlepsch hive, with a door at the back and the movable frames in a compartment at the bottom which were very difficult to remove.

In 1878 Hopkins first heard or read of A. I. Root and immediately communicated with him and later ordered a comb foundation machine, honey extractor, smoker, etc. He constructed a number of Langstroth hives and by the opening of the 1879 season had an apiary of 50 colonies established on modern lines. His apiary became a show place of the district. Unfortunately his apiary was too near the bush, which yields of honey too dense to extract from the combs in the ordinary way. He therefore began raising comb-honey in one pound sections, for which there was a great demand, but as the section boxes had to be nailed together it was a tedious process.

He arranged with Bagnall Brothers for the manufacture of a large supply of hives and frames and soon had a large trade, sending supplies to Australia as well as to all parts of New Zealand.

In 1880 of '81 he introduced Italian bees from California, soon after Italian bees had been introduced by a Mr. Harrison and the Canterbury Acclimation Society. It proved difficult to get pure Italian colonies started because of so many black bees, but by constant weeding out of mismated queens it was accomplished.

In 1881 the first edition of Mr. Hopkins "Bee Manual" was published. It had a large circulation in Australia so when the third edition was published the title was registered as "The Australasian Bee Manual".

The demand for beekeeping appliances and Italian queens grew rapidly so that a good business was built up, but Mr. Hopkins was more interested in producing honey. When he heard of the magnificent crops of white clover at Matamata which when in bloom made the country look as if covered with snow, he longed for an opportunity to go into beekeeping there. Mr. Firth, the owner of an estate of 87,000 acres in this white clover region became interested in beekeeping and arranged with Mr. Hopkins to establish an apiary there. Mr. Hopkins sold his business to Bagnall Brothers and set out for Matamata with his bees and appliances. He bought up all the colonies he could locate and had in all about 100 colonies. The Italians were kept at the home apiary and with the others an out-apiary was established. The bees were Italianized as fast as possible but in a couple of years the yield from 200 colonies was ten tons. This was about the average yield, but the land at Matamata became "clover sick". The clover would grow for about three years and then die out completely, so Mr. Hopkins plan of establishing six or eight out-apiaries was abandoned.

Much was written in various bee-journals of Eastern races of bees and in 1879 Mr. Jones of Canada and Mr. Benton of the United States went to Cyprus and India to investigate these. Mr. Benton established colonies at Cyprus, Palestine and Carniola for raising queens of the several varieties. Through a California beekeeper Mr. Hopkins obtained five nuclei of pure Holy-Land bees and five crosses of Holy-Land and Italians.

Mr. Hopkins was building up a queen trade and after sending a specimen shipping cage to the Postmaster General at Wellington he was given permission to send bees through the mails in 1882. At the home apiary he raised Italian queens for home use and for sale. He also sold Holy Land queens.

The demand for Langstroth hives and all new appliances increased rapidly. Mr. Hopkins was the only manufacturer of comb-foundation he was kept very busy and had difficulty in obtaining wax fast enough to fill the orders for foundation. On one occasion he had to import two tons of wax from England. Various comb-foundation machines were introduced but after trying six different kinds Mr. Hopkins decided that the Root machine was most practical for him. A friend visited him and looked the foundation machine over carefully and on going home he constructed one of two wooden rollers studded with hob-nails which answered the purpose very well.

As the demand for wax increased, the price rose until many were tempted to adulterate it. This was done with mutton tallow which was easily detected by an expert. The price kept on soaring until commercial adulteration was indulged in, but one man at Auckland served six months in jail for the

crime and the practice ceased.

In 1883 the first number of The New Zealand and Australian Bee Journal was published with Mr. Hopkins as editor. Many good articles were contributed but the circulation was of necessity small, so it barely paid its way. After two years it was taken over by the New Zealand ~~Farmer~~, "Stock and Station Journal", Mr. Hopkins editing the bee section, which he continued for at least thirty-two years and probably longer.

Mr. Hopkins staged the first exhibition of bees, honey and appliances at the Agricultural and Pastoral Association Spring Show in November 1879. He had bees in an observation hive which created great interest. In 1884 the first general bee and honey show was instituted in connection with the horticultural societies exhibit. At the same time the first national New Zealand Beekeepers Association was formed. A library containing all the standard work on bee culture and the American and English bee journals was later established.

Much dissatisfaction was expressed by beekeepers as to the great difference in buying and selling prices of honey, the middleman getting all the profit, so a honey depot was established. This was not a success, however, as the small beekeepers continued to sell their honey to the middleman at less profit than they could have obtained at the honey depot. There had been such a rush into beekeeping that in 1884-5 honey could be bought at all auction rooms in 60 pound tins for two shillings, six pence, or about a cent a pound, American money, and eventually a lot was carted away for nothing.

For the first few years after the new beekeeping had become established, the type of honey extractor in general use was the fixed basket, two-comb "Novice" (A. I. Root). Mr. Wilkin of California constructed an eight-frame reversible extractor and in 1883 sent diagrams of his extractor to Mr. Hopkins. From this Mr. Hopkins drew a plan of a six-comb reversible extractor which was constructed for him at great cost because it was made of more expensive materials than was necessary. It proved a very satisfactory machine however, except that the handle was on top of a vertical shaft, with no side gearing. Eventually the side-gearing was devised and quite a number came into use in the next few years. At the very start a standard hive was adopted by the beekeepers of New Zealand and Australia. It was the ten-frame Langstroth, which was very fortunate for the beekeepers.

While at Matamata Mr. Hopkins accidentally discovered that by stirring honey as it commences to granulate a much smoother and lighter texture is obtained. Having left some honey in the lower part of an uncapping can until it had so far granulated that it would not run through the honey gate, he stirred it until it would run, then setting it aside until it was firmly granulated he noticed it was of much finer texture and lighter color than ordinary granulated honey. On experimenting he found it was the stirring that had improved it.

In 1886-87 Mr. Hopkins was threatened with a breakdown from over work and was forced to leave Matamata. Soon after financial difficulties of Mr. Firth's estate made it necessary that the bees and the land of the estate be sold. Mr. Hopkins set just pride in the fact that the bees had always been profitable to the estate clearing £ 400 (pounds sterling) annually while under his care.

On leaving Matamata Mr. Hopkins went to Auckland, taking a number of colonies with his best breeding queens with him. There he continued to rear Min. 12-4.

queens until in 1888-89 he discovered symptoms of American foulbrood. He found beekeepers with the old box hives whose bees had died, they knew not why. The hives had been left as they were and were breeding places for the microbes which any bee might go in and pick up. He gave up the rearing of queens because of this and went into business, acting as agent for Bagnall Brothers.

The condition of the Auckland honey market at this time was terrible. All kinds of honey was sold in all kinds of containers. Many of the men who had rushed into beekeeping a few years previous, expecting to make money, and who found they were likely to loss instead of gain had dropped out, which was one reassuring feature. Hopkin's got control of the honey market by employing a man to watch the auction marts and to buy all the honey, good, bad or indifferent. Gradually, at some loss to themselves, these two men worked the prices up and by putting a better grade of honey on the market created more for it and finally won the trade of the middleman.

In 1887 the first number of the "Australasian Bee Journal" was published and flourished for three years, but then Hopkin's health gave out and he was forced to cease publishing the journal and it was incorporated with the "New Zealand Farmer."

Early in the '80s foulbrood was reported rampant in parts of New Zealand and at the end of four years after it was first reported it had spread practically all over the two islands. In 1907 Hopkin's sent samples of diseased combs to Washington and Dr. Phillips stated that each sample was affected by the disease known in America as American foulbrood and caused by the organism known as Bacillus larvae. The "box hive man" was causing more trouble. By his indifference he had spoiled the honey market and caused the failure of the honey depot. Now by his neglect he was causing the spread of the dreaded disease. Not being dependent upon his bees for a livelihood, if they contracted foulbrood and died he didn't bother to take care of the infected hives. To combat this disease a committee of the New Zealand Beekeepers' Association was appointed to draft a bill to be presented to Parliament in 1886. The bill was drawn up and presented but never became law, which was just as well as the treatment recommended for curing foulbrood was the drug treatment, which of course was later proven to be of no value. It was however "a creditable effort to get control of the bee disease in those early days."

In the early '80s some American canning houses were flooding the markets with a so-called honey which was in reality about 56.5 per cent glucose, 25 per cent water and about 15 per cent honey. It was sold in New Zealand, until realizing how this fraud was spoiling the legitimate honey trade, the New Zealand Beekeepers' Association asked for a protective duty on all imported honey. A duty of two pence (four cents) per pound was placed on all imported honey in 1888 and it has never been repealed.

To encourage the general use of honey as a food and medicine, the New Zealand Beekeepers' Association published a twelve page pamphlet in 1888 which was well circulated. Much to Hopkin's chagrin at a later date the Department of Agriculture published a honey pamphlet compiled by an American beekeeper, he feeling that it showed that no New Zealand beekeeper was capable of getting out one of his own.

A thick honey is produced from the native bush of New Zealand which is a great nuisance to the beekeeper as it is so thick that it cannot be thrown from the comb in the extractor. There are at least two New Zealand plants

which yield a poisonous honey but as one yields before the commercial season begins and the other not until the season is over, there is little danger from them, unless wild honey is eaten at that particular time. If allowed to stand for six weeks there is no danger from the poison.

From 1892 to 1905 was a dreary and disheartening period for the beekeepers. In the absence of legislative power nothing could be done to clear away the box-hives and the foulbrood they contained and to control the spread of the disease. Many lost heart, only the pluckiest and those who had all their money invested stuck to the bees, hoping that sometime something would be done. In 1904, complaints having reached the Department of Agriculture, a sum of money was voted by Parliament for the promotion of bee culture and Mr. Hopkins was appointed Government Apiarist. In his first report he urged legislation against the box-hive menace. His first move among the beekeepers was to organize beekeepers' associations in the chief centers of beekeeping so that they might be ready for any opposition that might come up.

At the Ruakura Government Farm a model apiary was started in 1905 with fifteen colonies which were later increased to about a hundred. Cadets were trained there, many being women who later became successful apiarists.

In 1908 the Apiaries Act was passed by Parliament. In 1909 a law was enacted compelling the registration of all apiaries and supervision of all imported bees, making the New Zealand law one of the best apiary laws in the world. In 1908 two inspectors were appointed and later the number was increased to four: they are now supplied with transportation so they can accomplish much more. In 1915 the compulsory grading regulation for export honey went into effect, the government brand on the cases denoting the quality of grade of the contents.

The beekeepers organized a Co-operative Honey Producers' Association to deal with local and export trade. The export trade began in 1884 when Mr. Hopkins sent a case to England. It was sampled by a honey expert who said it was "very good honey but contained too much wax". The fact was the honey was so hard and dry that it puzzled the expert and, of course, there was no wax in it. There is now a Bristol and Dominions Producer's Association which deals directly with the Honey Producers' Association with mutual benefit.

Realizing the necessity of knowing whether the water content of a sample of liquid honey is within the point which might set up fermentation, Hopkins experimented with a hydrometer and found that honey showing a specific gravity of 1.420 or over can be marketed without risk. These figures have been accepted and the hydrometer has come into general use among New Zealand beekeepers.

Isaac Hopkins was born in England in 1836. Thirty years later, 1864 finds him in New Zealand. Before he took up his abode there he had traveled from Northern Russian to northern China and in all continents except America. Being one of the pioneers of the islands he grew up with the progress made by the new colony. Of a rough and ready type, he was and is well liked by every one he met throughout the islands. He wished to get a change of atmosphere and a rest and as long as he remained in connection with the apicultural work there was none. In 1915 he contemplated taking a vacation by going to England by way of America but the World War intervened so that he is still in New Zealand living in Epsom. After the war he served in the official capacity of advisor to the government in apicultural matters. At the present writing,

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1925, Mr. Hopkins has reached the ripe old age of 69 years, of this time he has lived 61 years in New Zealand. He is still active as shown by his writings (letters) appearing from time to time in the bee-journals, the August number of the Bee World of 1924 having the last one received. Early in the past fall, Doctor Phillips received a letter from him congratulating him in his new position as Professor of Apiculture at Cornell University.