

THINGS MY MOTHER TAUGHT ME.

Canning, Highlander and that Mayonnaise

Bill Bryce



My mother taught me the first recipe I ever learnt. It was very simple:

Take one tin of Highlander Condensed Milk and empty the contents into an Agee jar kept for the purpose. [I still have the jar] Half fill the empty tin with D.Y.C malt vinegar, rinsing out any remaining condensed milk with the vinegar, and pour into the Agee jar. Mix a heaped teaspoon of Colman's Mustard powder with a little water, add to the jar and mix well. It is best left to thicken overnight and used the next day.

The recipe taught me many things—balancing flavours, adding dry to wet and even how to minimise waste. I did however, quickly adapt it to make sure there was some milk left in the tin for a spoonful or two later. Most people of a certain age can probably remember sticking a finger into the lovely thick, creamy, gooey, rich, overly sweet gloop in a tin of condensed milk and slowly licking it clean.

This famous sweet and sour concoction has been variously called Salad Dressing, Salad cream, Mayonnaise, and I have even heard the rather derogatory term, Housewife's mayonnaise. Although today it can induce a strong cultural cringe amongst many, others, myself included, see it as a legitimate and delicious part of our culinary heritage. I still make it regularly and always make a jar-full for Christmas.

This then is a very brief overview of how the process of canning began, the story of condensed milk, and a brief history of the Highlander brand.



Four classic brands - Agee, Highlander, Colman's and D.Y.C.

The preservation of food has played a vital role in the story of human development. Storing the glorious abundance of one season to meet the deficiencies of another, avoiding the high and lows, the boom and bust of seasonal food production, has been a need throughout human existence. In a pre-refrigeration world processes like drying, curing, salting, brining, smoking, conserving and fermenting had meet our needs. However, as we began exploring the planet and taking long sea voyages these types of food preservation showed their inadequacies, with dietary diseases such as scurvy becoming common. Like many other developments in the food industry, the need to feed military forces in the field was also a major driving force. The onset of the industrial revolution and the ever increasing urbanization of the population meant new methods where required.

LAZZARO SPALLANZANI

In about 1768 Lazzaro Spallanzani (1729-1799) developed experiments to disprove the theory of abiogenesis or spontaneous generation, the idea that organisms originate from non-living matter. He was the first to explain mammalian reproduction and successfully carried out in-vitro fertilization with frogs and even successfully artificially inseminated a dog - hence the famous statue in Scandiano, Northern Italy, depicting Spallanzani inspecting a frog through a magnifying glass.

Using four beakers of broth he found that the one that was sealed and boiled was the only one that remained clear over time, thus helping to prove his theories on microscopic air-borne life. Destroy the organisms with heat, then keep the container sealed so that they cannot then re-enter.

Spallanzani paved the way for Nicolas Appert's work and laid the foundations for Louis Pasteur's later discovery of the microbe.

NICOLAS APPERT

Nicolas Appert, (1749 - 1841) learned to cook from his father, an inn-keeper and hotelier. He became a highly skilled chef and soon found employment with the aristocracy. About 1780 he established a successful confectioners in Paris. Appert was interested in the preservation of sweets and fruit and experimented for several years using Champagne bottles. The Paris of 1795 was not good for business given its political turmoil and regular food riots, and so Appert moved to Ivry-sur-Siene, not far from the city, where he built a small factory and continued his experiments. He soon started the small-scale production of bottled preserved foods, which he mostly sold locally. After a successful trial with the French Navy in the early 1800s, Appert moved once again, this time to the village of Massy, to the south of Paris. Here he built new facilities and began supplying a shop in Paris. His trials with the French Navy continued and the business quickly grew to be a sizable local industry.

In 1795 the Directory Government of France began offering a substantial prize for the discovery of a process to preserve food for the army

that provided a better diet than the usual salted meat, was economic to produce and was easily transportable. By the late 1800s the situation had become dire as the supply of cane sugar had been cut and general imports greatly restricted because of the Napoleonic Wars. As a consequence, the Société d'Agriculture was offering the very large sum of 12,000 FF for the publication of a work on new preservation methods. Appert decided to offer his results. His discoveries were recognised and Napoleon himself awarded the prize in 1810.

That same year Appert published *L'Art de Conserver Pendant Plusieurs Années Toutes les Substances Animales et végétales* (or *The Art of Preserving Animal and Vegetable Substances*). This was the first cookbook of its kind on modern food preservation methods. The factory was expanded with the prize money to become the first commercial enterprise of its kind. Towards the end of the wars Appert's factory had been requisitioned as a field hospital and by the time Napoleon had been defeated it was in ruins. The subsequent collapse of the Empire led to financial disaster for Appert. Having effectively given away any patent to his process by the publication of his techniques, he was left with no income. Years later the French Government recognized his work and provided financial assistance for Appert to set up premises once again and continue his experiments.

After years of careful and thorough experimentation Appert had developed a sterilization process using bottles sealed with cork and wire then boiled. His process is the basis of industrial canning and home preserving methods still used today. "Appertisation", the process he invented, was used to honour his name. Today he is considered the father of canning. His book has been translated and reprinted and, in recent years, has become a popular reference on prepper web sites. From a commercial perspective the down side to this method was the obvious fragility of the glass containers, especially during transportation.

Only months after the publication of Appert's work in 1810 a London broker, Peter Durand, patented a method virtually identical. There are conflicting theories about how quickly the expertise crossed the Channel. Did Peter Durand steal the concept or did Appert sell what amounted to state secrets in a time of war? What we can be certain of is that Durand quickly sold his patent to an engineer named Bryan Donkin.

THE FIRST TIN CANS

Donkin became business partners with John Hall and John Gamble who operated the Dartford Iron Works. They were soon producing food in tinned iron canisters. These tinned containers give us the word "tin."

By 1813 they had fitted out a building they called a "preservatory" in London - the first food-canning factory using metal containers in the world. Ironically, like Appert, their output was also almost solely going to the military, this time the British Navy.

Although a major step forward from glass containers, they were made from tinned cast iron, and were therefore heavy to transport. They were also hand-made and the output of a highly skilled worker was only between four and six canisters per day. Eventually this increased to two workers being able to produce between 100 and 120 a day but it was still a long way from mass production. Getting at the contents also required significant effort. Stories abound about the lengths people went to in order to get at the contents - bayonets and axes were used and some even resorted to trying to shoot the cans. The company provisioned several expeditions and, in 1824-25, Donkin, Hall and Gamble provided tinned Roast Veal to Admiral William Parry in his search for a northern route from the Atlantic to the Pacific, the as yet elusive, North West Passage. Some of those tins survived and bear the inscription "Roasted Veal, cut round on the top near to the outer edge with a chisel and hammer."

Canning was introduced to America as early as 1817 by Englishman William Underwood and, by 1822, he had formed the William Underwood Company and opened a factory in Boston processing condiments and pickles following Appert's methods and using glass containers. By the late 1830s the company had moved to steel cans coated in tin because local glassmakers couldn't keep up with his production. During the "Manifest Destiny" period in America these products like them were important in the great push westward. Sue Shephard in her book *Pickled Potted & Canned* says that Underwood's bookkeepers were the first to use the term "can". Underwood's Devil Ham was to become almost an American icon and the devil logo is the oldest food trademark still in use today in the United States. The family owned business was sold to PET Inc. in 1982, which in turn was acquired by Pillsbury by which time both companies were merely brands.

During these early days of canning there were many failures and there was much public suspicion and skepticism about the products - at times the flavour and appearance of the contents was less than appetising. The other major barrier to the can's widespread adoption was the high labour cost which put them beyond the purse of most people.

CONDENSED MILK

In 1846 the Donner party left Missouri by wagon train bound for California. They took a newer, faster route through Utah and Nevada. Lansford Hastings promoted it but unfortunately he had made the journey on horseback. The settlers with wagons found the going very difficult and, rather than arriving in September, they found themselves on the wrong side of Sierra Nevada in November. Early snows trapped them and food stores soon ran out. A portion of the party set off to get help but most died from starvation and cold. Legend has it the remainder only survived by resorting to cannibalism.

Although, in the story of American settlement and westward migration, it was in many ways a relatively minor incident, the Donner party has become a notorious tale. Inspired by their plight, surveyor, newspaperman and teacher, Gail Borden (1801-1874) vowed to make concentrated foods available to adventurers and travellers so that no one would ever again suffer the horror of eating their own.

His first invention was a one-pound meat biscuit which contained the nutritional equivalent of five pounds of meat. He travelled to England in 1851 with this new product and managed to get it approved for use by the British military. During the return voyage on an immigrant ship, Borden was moved by the poor conditions for all, and in particular the ill health and suffering of infants. The ship carried cows to furnish fresh milk for babies but the milk was often dirty, quickly soured and often made them sick. The story goes that Borden told the Captain that he meant to find a way of preserving milk, making the cows unnecessary. "A ship without cows..." said the Captain, "...it can't be done man. You're crazy."

In 1853 Borden began experimenting in a laboratory that a community of "Shakers" in New Lebanon, New York allowed him to use. The

Shakers used the laboratory equipment and vacuum pans to extract and preserve plant juices to make medicines, and the community also freely gave Borden the benefit of their knowledge and experience. There was also a plentiful supply of local milk for experimentation.

The first commercial operation met with little success and soon closed. Another attempt was made a year later but once again this business failed. Later the same year Borden found a business partner, Jeremiah Milbank. The first product was unsweetened condensed milk which was sold from a pushcart. The canning of sweetened condensed milk began soon after. The secret to the success of this new product was twofold. Using vacuum pans to condense the milk meant that lower temperatures could be used and the whole process was faster. The addition of sugar allowed the temperature to be reduced further and it also acted as a preservative. Unsweetened condensed milk either spoiled quickly if made at the same temperature or, if properly sterilized, it had an unpleasant "cooked" flavour. During his experiments Borden realised that cleanliness, speed and temperature were all vital during the entire process from cow to can and he put strict rules in place for farmers. He patented his process for making sweetened condensed milk in a vacuum in 1856 and a year later established the New York Condensed Milk Company producing the Eagle Brand of condensed milk.

Before canned milk was widely available, fresh milk, in the cities at least, was considered somewhat dangerous. It was commonly "swill-milk" because it came from cows fed on distillers or brewers "swill." The milk contained very little butterfat and to cover up its blueish look it was artificially coloured - the more unscrupulous sellers also watered it down. Long supply lines and lack of refrigeration didn't help. Sales of Eagle Brand were also given a boost in the early days by a series of scathing articles in New York newspapers about the unsanitary state of the city's dairies. A factory was needed and Milbank financed the building of a condensary in Wassaic, New York. Opening two months after the outbreak of the American Civil War in June 1861, it was almost immediately commandeered by the United States government for the Union army. It became a standard field ration. Production was massively increased to meet demand but the real success for the brand was that the soldiers actually liked it and many testimonials were written in

its praise. The company never looked back and Eagle Brand condensed milk is still around today.

Borden had found long lasting success and his process is still the basis for the world's condensed and evaporated milk industry. His tombstone reads:

"I tried and failed, I tried again and again and succeeded."

CHEAPER CANS AND THE CAN OPENER

The late 1840s and the mid to late 1850s saw some major technological breakthroughs that greatly benefited the canning industry. In 1849 Henry Evans patented the pendulum press and, when combined with a die device Evans had also invented, the can ends could now be made in a single operation. Production leapt from five per hour to fifty.

In a somewhat bizarre twist, the second advance, over forty years after the tinned metal canister was created, was the invention of the humble can opener. In 1855 Robert Yates, a cutler and surgical instrument maker, patented a lever-type design in England. and three years later Ezra Warner patented another design in America featuring a bayonet and sickle. The United States Army adopted Warners opener during the American Civil War but it was considered too dangerous for domestic purposes. It was common practice during this period for cans to be opened in the store at the point of sale. In 1865 the famous "Bull's head opener" was introduced and was given away with cans of pickled beef, popularly known as "Bully Beef".

Also in 1855, Henry Bessemer (1813-1898) patented a process enabling the inexpensive, industrial scale, mass-production of steel by blowing air through molten pig iron. This meant the cost of raw materials fell dramatically, less skilled workers were required to make the cans and production volumes increased.

LOUIS PASTEUR

In 1857 Louis Pasteur (1822-1895) was able to prove that micro-organisms were responsible for both the fermentation and souring of wine, beer and later, milk. He came up with a hypothesis called the Germ theory to

explain what was happening.

In 1862 he also proved that these organisms could be destroyed in milk by boiling followed by rapid cooling, the process we now know as pasteurization. He also finally dispelled the still widely accepted theory of spontaneous generation. This removed the guesswork in the canning industry, greatly increased product reliability and finally explained why sometimes the process worked and sometimes it didn't. Pasteur was certainly not a gourmet, in fact he was purported to have the same dish of mutton cutlet with sautéed potatoes every day except Thursday, when he had sausage and red kidney beans.

ANGLO-SWISS AND NESTLÉ

In 1866 George Ham Page (1836-1899) from Dixon, Illinois along with other American investors, a Swiss banker and his brother, Charles Page, founded the Anglo-Swiss Condensed Milk Company. The brothers had seen the success of Gail Borden's product and Charles in particular had seen the benefits first hand during the American Civil War. At the end of the war Charles was appointed United States Consul to Switzerland. Motivated by abundant fresh milk supplies and the proximity to as yet untapped markets he enticed his brother to Switzerland. Together they proceeded to build the first condensed milk factory in Europe at Cham and began producing their Milkmaid Condensed Milk.

A year later, in 1867, Henri Nestlé opened for business as Farine Lactée Henri Nestlé in Vevey, also in Switzerland, to market a milk-based infant food he had developed.

Soon after, Nestlé began working with Daniel Peter to perfect Peter's invention - milk chocolate. Peter's problem was how to remove any remaining water from the milk as it was causing mildew to develop on the finished product. After several years of research the problem was resolved and the company eventually entered the burgeoning chocolate industry with Peter's Swiss Milk Chocolate in 1904.

Meanwhile growth had been rapid for Anglo-Swiss and, in 1873, a British branch was opened in Wiltshire and in 1877 they moved into the baby food market in direct competition with the company now known as

the Société Farine Lactée Henri Nestlé. A year later Nestlé responded by starting production of condensed milk. They became fierce rivals. By 1881 Anglo-Swiss had expanded into America at Middletown, New York and in 1888 opened the largest factory of its type in the world in the Page brothers' hometown of Dixon, Illinois. At George Page's death, in 1899, the company had eleven factories in Europe, Britain and the USA. In 1905 the two companies merged to form the Nestlé and Anglo-Swiss Condensed Milk Company.

The First World War saw massive growth for the company, and production doubled. Lean times were ahead however, as lucrative government contracts dried up at the end of hostilities. The earlier problems with fresh milk had largely disappeared as pasteurization was by now in wide use and a good milk supply was available. Consumers were turning away from the company's products. Good management saved the business and in the early 1920s expanded its chocolate operation. Once again the clouds of War descended on Europe and in 1939 the company's profits fell by seventy percent. However once World War 2 began immense growth occurred, as it had in the First War. Most of the growth was due to a new product, Nescafé Instant Coffee, which they sold to the American military. They had learned their lessons well and so to avoid any post war drop in trade in 1947 they acquired Maggi to add an entire new product line to their range and the name was changed to Nestlé. Subsequent acquisitions and astute management set the business on the road to becoming the largest food and beverage business in the world today. It is also the most profitable and is ranked No. 1 on the Fortune Global 500.

EVAPORATED MILK

John Baptist Meÿenburg (1847-1914) had worked for the Anglo-Swiss Milk Company in Cham, Switzerland, where he had experimented with the preservation of milk by means of high heat to sterilize rather than use sugar as a preservative. His employer wasn't interested in implementing his ideas so he resigned and emigrated to the United States in 1883 where he patented his innovation of evaporated milk. He moved to Highland,

Illinois due to its large Swiss population and ready supply of milk and, with others, founded the Helvetia Milk Condensing Company. Unfortunately, milk canned in 1886 spoiled and Meÿenburg was blamed and so he left the company. During the First World War American servicemen knew the product as the "tin cow". In 1923 the company became the Pet Milk Company and later PET Inc., a major player in the food industry. The name is said to come from company President Louis Latzer's beloved cow, Pet. Meÿenburg went on to establish other evaporated milk plants including the Monroe brand in Wisconsin, Columbia in Illinois, Lilly in California and Carnation in Washington.

The next major advance for the industry occurred in the decade 1880 to 1890 when automatic can-making machinery came into widespread use.

In 1895 the grandson of William Underwood, William Lyman Underwood approached the Massachusetts Institute of Technology to help cure his problem of swollen, stinking cans of putrid clams. In collaboration with Samuel Cate Prescott (1872-1962) they discovered that the cause was the presence of heat resistant microorganisms that had survived the canning process. By using higher temperatures, 121°C, for longer periods of time, 10 minutes, they solved the problem. This was a major advance in the food canning industry and to food science in general. Prescott went on to found the Institute of Food Technologists, the first body to recognize food science and technology as a profession.

CARNATION MILK

In 1898 the Washington Condensed Milk Company built a factory in Kent, Washington, USA, but within eighteen months it was bankrupt. Elbridge Amos Stuart (1856-1944) formed the Pacific Coast Condensed Milk Company with a business partner and bought the plant and machinery from the First National Bank of Montana. He chose to produce evaporated milk and by September 1899 was in production. The process he used was a relatively new one and so he employed a Swiss dairyman nick-named "Cheese John" or John Meÿenburg, previously of the Helvetia Milk Condensing Company. The product's name was later changed to Carnation Evaporated Milk and the company became

the Carnation Milk Company apparently after Stuart saw a display of Carnation brand cigars in a tobacconist.

Carnation's famous slogan, "the milk from contented cows" was introduced in 1907 although the brand has also been the target of several "dirty ditties" over the years, of which, one at least has passed into urban legend. The story goes that in the 1940s or 50s the company ran a competition offering \$5000 for the best rhyme to begin with "Carnation Milk is the best of all." A little old lady from North Carolina/Wisconsin/North Dakota (take your pick) had worked on the family dairy farm for many years and when she read the advertisement she thought to herself, "I know all about milk and dairy farms...I can do this!" She sent in her entry and a week later a black limousine drove up to her house. A man got out and said "Carnation loved your entry so much, we are here to award you \$1000, even though we will not be able to use it." This is her entry:

*Carnation Milk is the best in the land
Here I sit with a can in my hand
No tits to pull, no hay to pitch
You just punch a hole in the son of a bitch.*

Some versions even claim the company CEO had the quatrain on his office wall. Nestlé acquired the Carnation Milk Company in 1985.

CANNED MILK IN NEW ZEALAND

Here in New Zealand the news of Borden's process and factory was reported in the Daily Southern Cross in December 1862 and later in the Lyttelton Times. By July of 1865 the Dunedin firm of Bates, Sise, and Co., importers of American merchandise were advertising Borden's Milk for sale in the Otago Daily Times.

By the early 1870s questions were being asked as to whether it was possible for a New Zealand condensed milk industry to be established. The government of the day was investigating several potential industries that could benefit the colony and condensed milk was one of them. The

idea was not without controversy with many believing cheese and butter were the future with some putting forward the view that it was not the government's job to be involved in the support of any business. The first cheese factory was based on John Mathieson's farm, Springfield on the Otago Peninsular. It also used the co-operative model that formed the basis of the New Zealand dairy industry for many years to come. The factory produced a Scottish style "Dunlop" cheese.

In 1877 advertisements began appearing for Swiss Condensed Milk, presumably from the Anglo-Swiss Company under the Milkmade label.

A prize of £500 was offered by the Government in 1881 for the first 25 tons of butter, or 50 tons of cheese, to be exported. Dairy factories for cheese, butter and bacon production began opening all around the country.

The first factory for condensing milk in New Zealand was the Roseville Dairy Factory at Sawyer's Bay, Dunedin, which opened on the 20th January 1888. Unfortunately the finished product was of variable quality with several batches going bad. A convoluted wind-up of the company began in mid 1889.

Arthur MacDonald and Company announced the purchase of the factory in July of 1891 but the sale appears to have collapsed. The factory and plant was offered at auction on the 23rd February 1892. Ironically the Roseville Dairy Factory took first prize for preserved milk, fourteen months old at a national Dairy Produce Show held in Dunedin five days prior to the auction.

In 1890 the second factory to open was at Wallacetown near Invercargill by Robert Blair. In fact the operation was actually at Underwood, a few miles outside of Wallacetown. He had previously worked at the New Zealand Meat Preserving Company's plants and decided to enter business in his own right forming The New Zealand Milk Preserving Company. This operation used the vacuum methods of condensing as used by Gail Borden and was equipped with the most up to date machinery imported from England. The factory was also self-sufficient in that it made its own cans and wooden packing boxes on site. The first cans to come from the factory were marketed under the Maltese Cross Brand.

On the morning of the 27th of January 1893 Blair had a hearty breakfast

at 7 o'clock and was in apparent perfect health. But at the factory he vomited, complained of a headache and died suddenly aged 44 years. He was greatly respected and sadly missed. In September it was announced that Mr A. H. Highton, the rector of Southland Boys' High School had bought the factory. Having kept on Blair's factory manager, Mr S. McLeod, production quickly recommenced after a short closure.

NEW ZEALAND CONDENSED MILK.



(Made by A. H. Highton)
IS THE BEST.

IT IS RICHER AND FRESHER THAN THE
IMPORTED ARTICLE.
To be obtained from Grocers and Store-
keepers throughout the Colony.

**NEW ZEALAND MILK PRESERVING
COMPANY.**
UNDERWOOD FACTORY, INVERCARGILL.

Advertisement. Tuapeka Times 11th Sept 1895.

W. T. MURRAY AND HIGHLANDER

In 1896 W. T. Murray and Co. opened a factory at Maungatapere (North Auckland) and alternated manufacture of butter and condensed milk until 1900 when they opened a similar operation in Whangarei, closing the first factory. There are conflicting reports as to when this company acquired the Underwood plant but 1901 looks to be most likely. They closed the Whangarei operation soon after. Also in 1901 the Highlander trademark was registered and Highlander Sweetened Condensed Milk appeared on the market for the first time.

Murray heavily promoted the milk to a level that today we might consider saturation advertising. Looking at some of these today we might see them as forthright to say the least. They could certainly never be described as subtle.

Beginning in 1906, there were a series of seizures by the Health Department following the adulteration of condensed milk and the possession of bad milk for sale. Imported product made from skim milk was also being sold as condensed full cream. Several court cases followed. About the same time there was some negative feeling as to whether or not sweetened condensed milk was a suitable baby food. This prompted Murray to change his style of advertising and to use other promotional tools.

Murray entered various exhibitions and did very well, with Gold Medals at the Colonial and Indian Exhibition in 1905 and the N.Z. International Exhibition of 1906/07. More medal success followed in 1908 and 1911, with a Gold Medal at the Auckland Exhibition of 1913/14.



Advertisement. Auckland Star. 1st March 1901.

In 1909 Murray advertised a recipe competition, for collections of recipes incorporating the sweetened and "Capstan" unsweetened milk products. The judging was done by the well known Mrs E. B. Miller¹ from Dunedin.

How Murray used the competition recipes is not known but it is possible that at least some of the entries were used in 1911 when the company began advertising a free "New Cookery Booklet" incorporating recipes using the two types of milk. (Advertisements appear between Grey River Argus, 4th November 1911, until Wanganui Chronicle, 5 February 1912).

I am not aware of any copy of this booklet in public or private collections and therefore its size and content is not known. The word "booklet" implies small, as does the offer of free postage. Perhaps it was of a similar format to that of the Edmonds' "Sure to Rise" Cookery Book, which was also being distributed gratis at that time.

Following the 1913/14 Auckland Exhibition the company began to publish a sizeable cookery book as a way of further promoting their product. The Highlander Economical Cookery Book appeared in 1914, published by Murray's Ltd, Invercargill and printed by Whitcombe & Tombs, Dunedin. It had a colourful, stylised depiction of a young piper sporting a magnificent Tam O' Shanter on the cover. The artist clearly had a thorough understanding of the pipes as evidenced by the way they are held and the correct fingering.

The title page tells us "Comprising the Recipes used and demonstrated at the Chalet.... Auckland Exhibition 1913-1914 Specially designed to provide dainty, tasty, nourishing, wholesome, and economical dishes at the minimum of cost." The foreword credits a Mrs Turner with the recipes.

In total the first edition has 184 pages with 385 recipes which are presented in 18 categories. As is common with many early New Zealand recipe books there is a bias towards cakes and sweets - 271, or 70%, are recipes for

¹ Elizabeth Browne Miller was a cookery teacher and writer living in Dunedin. From 1889 she had produced a series of cookery books in association with lessons for the Technical Classes and at the Dunedin Exhibition. Her best known cookery book Economical Technical Cookery Book went into 16 editions between 1906 and 1923.

HIGHLANDER MILK COMPETITION, No. 1.

For the Best Collection of Recipes (limited to Twelve) of all descriptions wherein "Highlander" Sweetened Milk or "Capstan" Unsweetened Milk can be utilised. Open to Housewives and Amateur Cooks. First Prize, £5 5s; Second Prize, £3 3s; Third Prize, £1 1s; and Three Prizes of Two Dozen Milk each.

Competitors must use "Highlander" Sweetened Milk, or "Capstan" or Pasteurised Unsweetened Milk, enclose Three Wrappers with each entry, and write their names on a separate sheet of paper from the recipes.

Mrs E. B. Miller, authoress of the "Economic Cookery Book," will be judge, whose decision shall be final.

The following features will be specially taken into account in the awarding of points:—Economy, Novelty, Nourishing Dishes, Facility of Preparation, Confectionery, Invalids' and Children's Dietary, Advantage of the use of Condensed as against Fresh Milk.

Recipes sent in may be used and published by the Proprietors of Highlander Milk.

Envelopes to be marked "Competition No. 1," and addressed to MURRAY'S, LIMITED., INVERCARGILL, to reach by MAY 1.

Advertisement for Murray's recipe competition.

Otago Daily Times. 3rd April 1909.



Advertisement. The Grey River Argus, 11th Dec 1911.

"HIGHLANDER" MILK COMPETITION.

LIST OF PRIZE-WINNERS.

THE awards in connection with this competition have been forwarded to us by Mrs E. B. Miller, the judge. On reference to the numbers on the winning papers we find that the following are the successful competitors:—

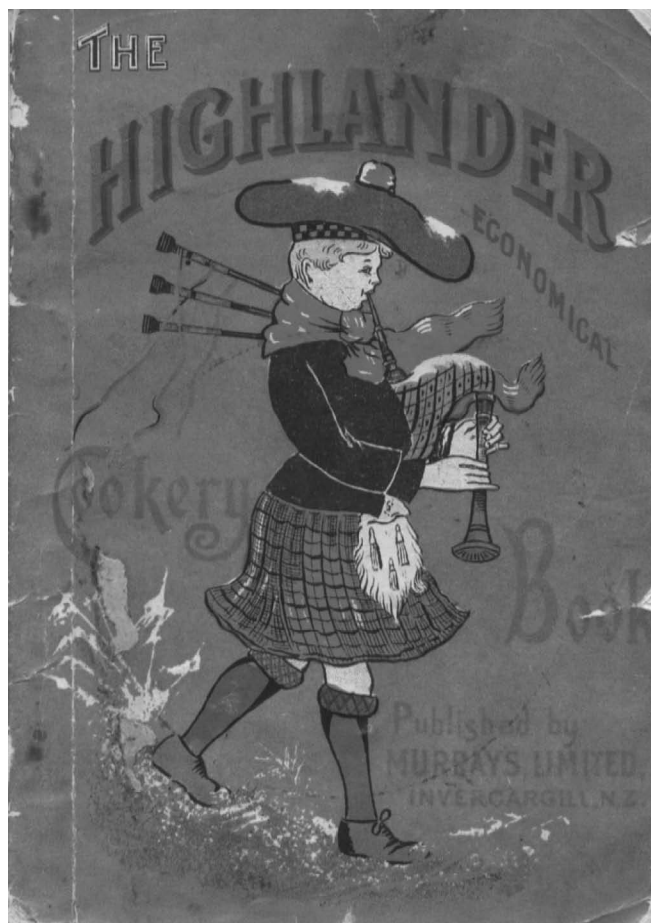
1, Miss M. Kibblewhite, Dunedin; 2, Miss M. Stewart, Timaru; 3, Mrs George Scandrett, Invercargill; 4, Miss L. McKenzie, Northend, Invercargill; 5, Miss Thelma Menzies, Roslyn, Dunedin; 6, Mrs W. Ferguson, Spey Street, Invercargill.

Cheques and orders have been posted to each of the above.

MURRAY'S, LIMITED,
Invercargill.

Competition Results:

Manawatu Standard, 28th May 1909.



Highlander Economical Cookery Book. 1st edn. Murray's Ltd. Invercargill, 1914.

sweet, rather than savoury items. Almost all of the recipes feature either of the company's two products, Highlander Condensed Milk or Capstan Milk.

Much is made of the correct water dilutions for Capstan Milk to suit any given purpose suggesting that an important use for the product was as a substitute for fresh milk. The book contains a foreword, an introduction and a brief history of the company. The recipes are presented in chapters and under the following headings.

Table 1. Contents of the first Highlander Cookery Book.

Heading	Number of recipes	Percentage
Soups	22	6%
Fish	28	7%
Cold Meat Dishes	24	6%
Sauces	25	6%
Cheese Dishes	18	5%
Vegetables	29	8%
Puddings	25	6%
Pies and Pie Making	24	6%
Fritters & Pancakes	8	2%
Sweet Sauces	9	2%
Cold Sweets	24	6%
Home made Sweets	46	12%
Scones, Gems, Teacakes	16	4%
Salads and Dressings	6	2%
Cakes / Cake-Making	36	9%
Fillings and Icings	15	4%
Yeast and Yeast Bread	10	3%
Invalid Cookery	20	5%

In 1915 New Zealand Milk Products Ltd was formed and it took over W. T. Murray and Co. Prior to the take over, Murray had also produced a small cookery booklet devoted to Highlander Home-made Sweets. The booklet is undated but features the same piper as on the cover of the first edition of the Highlander Economical Cookery Book.

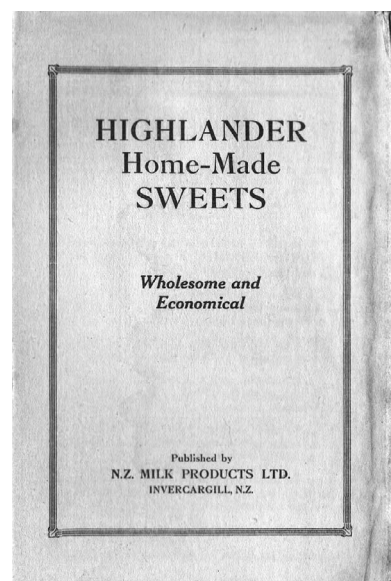
Although again undated (but 1915 or later), another edition of Highlander Home-made Sweets was brought out under the imprint of N.Z. Milk Products Ltd. This time however the cover is simple text without the piper illustration.

A "Second and Enlarged" edition of the Highlander Economical Cookery Book was published in 1922. This time the style of the cover has changed and we have a Pipe Corporal, indicated by him carrying the pipes, and the two chevrons on his sleeve.

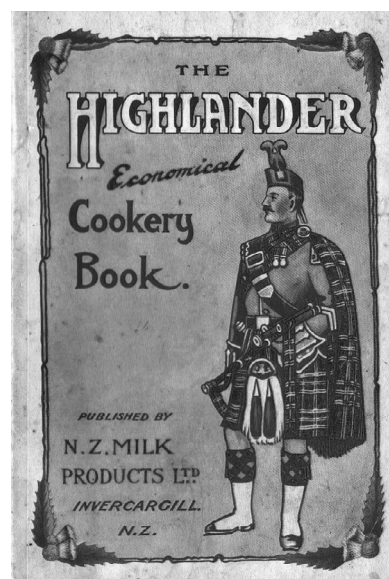
Reflecting the change in ownership, the second edition was published by N. Z. Milk Products Ltd, Invercargill, N. Z. and printed by Abel, Dykes Ltd, Auckland. The recipes have been "Revised and added to by Mrs M. S. Turner" and, as before, are "Specially Designed to Provide



Highlander Home-Made Sweets.
Murray's Ltd. [1st edn.] Invercargill,
1914c.



Highlander Home-Made Sweets.
N.Z. Milk Products Ltd. [2nd edn.]
Invercargill, 1915 or later.



Highlander Economical Cookery Book.
2nd edn. N.Z. Milk Products Ltd.
Invercargill, 1914.

Dainty, Tasty, Nourishing, Wholesome and Economical Dishes at the Minimum of Cost." - this time in bold text, italicised and capitalised.

The order of the sections had been changed slightly, with savoury and sweet sauces now next to each other. "Home made sweets" has been dropped and "confectionary" added. Entirely new in the second edition are "jelly making", "jam making" and "fruit preserving". The product range had increased by then to include Highlander Unsweetened Condensed Milk and Highlander Milk Icing.

The advertisements in the first edition are entirely self-promotional, however with the launch of the second edition external placements appeared. Shacklock's Orion ranges occupy a prime slot opposite the contents page, followed by Golden Ray Candles. In the body of the text Fleming & Company of Gore is featured.

Table 2. Contents of the 1922 second edition of the Highlander Cookery Book.

Heading	Number of recipes	Percentage
Soups	22	5%
Fish	28	6%
Cold Meat Dishes	23	5%
Sauces	25	6%
Sweet Sauces	9	2%
Cheese	20	4%
Vegetables	28	6%
Pudding	34	8%
Pies	21	5%
Fritters & Pancakes	8	2%
Cold Sweets	24	5%
Gems, Scones,		
Teacakes & Pikelets	18	4%
Salads & Dressings	9	2%
Cakes & Cake Making	40	9%
Fillings & Icings	19	4%
Yeast & Yeast Bread	10	2%
Invalid Cookery	20	4%
Jelly & Jam Making	24	5%
Fruit Preserving	18	4%
Confectionery	48	11%

The third edition came out in 1923, almost exactly the same as the second but with one less full page advertisement and so the pages are out of order compared to the second edition. The third finishes one page earlier with a blank page at the rear. Elite Toffees replace Shacklock opposite the contents page and other advertisements appear from Oak Jam, Blackwood & Co's Shreddo, Fleming & Co's Oatienuts, "Amber Tips" Tea, Gregg's Flavouring Essences and, once again, Golden Ray Candles.

A fourth edition was published in 1925 although it is not described as such. It was greatly reduced in size - to 56 pages and 136 recipes in 11 categories. There are no chapters, and many headings have been removed. Oak Jam And "Amber Tips" Tea are the only remaining advertisers.

Table 3. Contents of the fourth edition of the Highlander Cookery Book.

Heading	Number of recipes	Percentage
Sauces	34	25%
Vegetables	1	1%
Cheese	2	1.5%
Puddings	2	1.5%
Rice & Pasta	2	1.5%
Puddings	22	16%
Fritters & Pancakes	8	6%
Custards & Jellies	22	16%
Gems, Scones &		
Pikelets	16	12%
Salads & Dressings	8	6%
Cream fillings & Icings	19	14%

WHO WAS THE HIGHLANDER?

Nicola McCloy in her book *Made in New Zealand* says the original Highlander logo is thought to have been based on Drum Major James MacGregor of the Invercargill Pipe Band - Drum Major for the band from its formation in 1896 until 1915.

Although the image used in early advertisements, and on the tin labels, could certainly be based on MacGregor, it seems unlikely that any of the

covers of the recipe books are based on him. The absence of drums or a Drum Major's mace, and the lower rank of corporal tend to suggest a different model was used. However The Royal Stewart tartan and the uniform depicted are very similar to that of the Invercargill pipe band. The image has evolved over the years and is now a very stylized, rather wind swept, piper. Unfortunately a fire several years ago destroyed most of the band's archives.

THE UNDERWOOD FACTORY

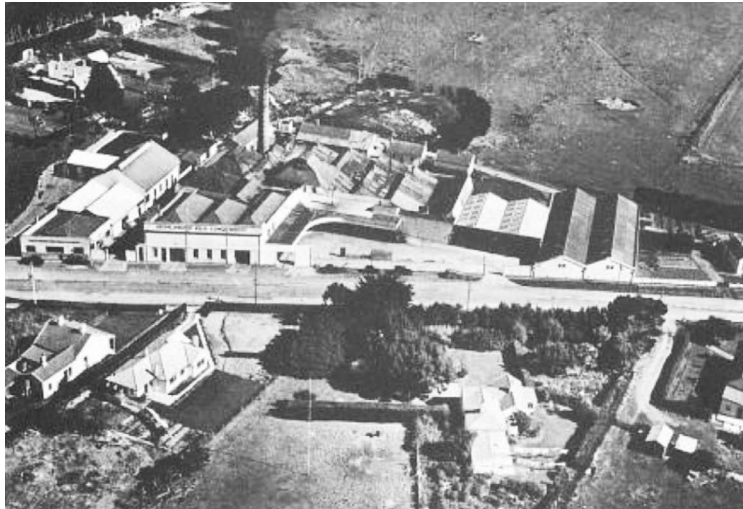
At its height the factory employed over 200 staff and had a reputation as a good place to work. The company built nine houses opposite the factory for staff as well as a substantial residence for the manager. It had a large garden as well as cricket ground and a tennis court for the use of staff. During the Depression the factory maintained production despite a big drop in demand in an effort to keep staff and to support suppliers. The storerooms were soon filled and so thousands of cases went on to be stored under the grandstand of the Invercargill showgrounds, Wards's Coolstores at Bluff, the Rosedale woolstore and an old fire station building in Invercargill.

Over the years the product line increased to include coffee, milk and Milo. The factory also made products for other companies including L.S.D. and Nestlé.

In 1926 Nestlé bought a 55% stake in the company and completely took over in 1938. Nestlé announced, in July 1963, their intention to close the factory the following year. The parent company blamed a 27% drop in milk production in the region in the preceding 12 months while the national output rose 7%. This meant it was impossible to increase production when there wasn't enough to meet current demand.

The last batch of 14 oz. tins was filled on the 26th May 1964 and production moved to a new plant in Papatoetoe, Auckland. The factory, buildings and land were auctioned off in September the following year with many of the lots being passed in. It later became a hide tannery.

Highlander Sweetened Condensed Milk is now produced in Australia.



An aerial view of the Milk Preserving Works complex showing the company houses in foreground and the Manager's home at far left.

The basis of my Mum's recipe is probably the last of the three dressing recipes that appeared in the Highlander Economical Cookery Book, but in practice, she probably had the recipe passed on to her, as she passed it on to me.

Although it has been adapted and simplified, the three core ingredients (apart from the spice and the heat) of sweetened condensed milk, vinegar and mustard are the same. In our house the only vinegar we ever had was malt, and the "exotic" cayenne and mace were unheard of. On a personal note I do love the concept of the amount of cayenne to cover a sixpence. *I must find a sixpence.*

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