

Top Secret in Horotane

By Barrie Woods

Back in 1941, at a farm in Horotane Valley, a top secret operation was underway.

The Second World War was fast escalating and there was a very real fear of a Japanese invasion of New Zealand, so many supplies were urgently needed for defence. Hidden away on a market garden was a hush-hush factory. Only a very few people knew of its existence and those involved were sworn to secrecy. It was making munitions for the war effort, including signal rockets and alert bombs. There's an interesting story of how this came to be.

We need to go back to 1874 when the University of New Zealand appointed their first professor of chemistry. Professor Alexander William Bickerton (known as 'Bickie') was a colourful character quite



*Prof AW Bickerton,
(painting by his
son Charles)*

befitting of the eccentric persona ascribed to many archetypical professors. A colleague described him as a "small, untidy, forgetful, excitable man: red-faced and catarrhal with a scrappy beard, always in a hurry, always perspiring and tearing about bent double over the handlebars of his bicycle". While it would be possible to write a lengthy book about Professor Bickerton's life (as others have done already), there are a few key aspects that are relevant to our story.

Professor Bickerton believed that the only way to teach successfully was to "make your class as entertaining as a music hall and as sensational as a circus". This he proceeded to do, and his lectures were regularly punctuated with bangs, whistles, smells, explosions, magic and wisecracks. As an aside, one of his students was Sir Ernest Rutherford of atom splitting fame. Professor Bickerton entertained his students not only in class, but from 1884 onwards, at his property at Wainoni as well.

On a 30-acre estate through the centre of which Bickerton Street now runs, he created woods, gardens and a lake out of a sandy wilderness. Here he established what he called a 'Federative Home' (an early form of commune) as an alternative to what he saw as "the lonely, wasteful condition of married life". This was where he concentrated his energies for the next few years. Instead of "hundreds of isolated women cleaning miserable little parlours, cooking daily meals for selfish and demanding husbands, in lives of pointless repetition", he envisaged a system of communal living, where all the members, united by an unselfish desire for the common good, would equally share the labour and the profits.



The 'Federative Home' in Wainoni

A feature of his entertainment at Wainoni was fireworks which were made in a small factory and under the professor's direction by his sons and members of the 'Federative Home'. His raw materials were chemicals obtained through the university, or especially imported. Foolscap lecture paper was used for the casings. The firework displays were conducted by the professor's sons and given at the lake's edge for the benefit of spectators seated on the grassed dunes.



The tram entrance at Wainoni Park.

Sadly, like many reformers, Professor Bickerton failed to acknowledge human laziness and selfishness and many of his housemates were too idle to clean out their own quarters or were simply free-loaders. The communal living experiment was not a success. At the same time an obsession with a controversial astronomical theory he called 'partial impact' led to Professor Bickerton parting company with the university in 1902. This was not helped by his outspoken criticism of the marriage institution, his socialist leanings, disrespect for the church, and his regular attacks upon university administration.

After being sacked from the university at the age of 42, Bickerton needed to find a new source of income. So was born Wainoni Park, one of the marvels of Christchurch in the early 1900s (sort of like an early version of

Disneyland). Thousands poured through the turnstiles to enjoy Professor Bickerton's 'diversions': an aquarium, fern and begonia houses, an art gallery, brass bands, Punch and Judy shows, a menagerie, balloon ascents, refreshment stalls, threepenny and sixpenny tearooms, outdoor movies, theatrical performances, a planetarium, magic shows, sand weaving, mock naval battles on an artificial lake, and most spectacular of all, the firework displays.

SHOW NIGHT! SHOW NIGHT!

AT LANCASTER PARK.

THE GREATEST FIREWORKS DISPLAY OF THE YEAR.

COLOURED SHELLS
BOMBS AND ROCKETS
BEAUTIFUL WATERFALLS
LOVELY RAINBOWS
FLAMING CASCADES.

**AT THE PIONEER CLUB'S ANNUAL
GIGANTIC DISPLAY,
On SHOW NIGHT, FRIDAY, 9th NOV.**

Special arrangements have been made with Messrs Stokes and Bickerton to ensure that this will be the finest exhibition of locally manufactured fireworks ever seen in Christchurch. 75!!

At this time there was good demand for fireworks displays and the professor needed help to produce them. One of his sons, Richard, joined forces with a Mr William Stokes who also had an interest in pyrotechnics to produce fireworks on a commercial basis. It appears that Richard purchased Mr Stokes business in 1899 and began trading as 'Bickerton and Stokes' – a name which became familiar in the New Zealand pyrotechnics industry. By 1909 Richard had moved to Wellington where continued to be involved in the fireworks industry for a while. Later he would become an optometrist.

In 1910, Professor Bickerton left for England to pursue his partial impact theory, leaving his

wife and family to carry on with Wainoni Park. Sadly, the park was not economically sustainable and in 1914 the estate was sold and Bickerton's novel enterprises came to an end.

Following the winding up of the park Herbert Bickerton took over the Christchurch fireworks business. On about an acre of land in Ottawa Road were an assortment of sheds and huts, in which the manufacturing was carried out. The huts were three-sided so you could get out of them in a hurry. The machinery for making the fireworks was improvised locally and while some of the fireworks ingredients had to be imported, much the gunpowder was old World War I stock bought from the army at 2 pence a pound.

Herbert's largest undertaking was for the Peace Celebrations of July, 1919. Every town in the country seemed to want fireworks and the Wainoni factory supplied them. To meet the demand Herbert was helped by his young son Ron, who left school at the time of the influenza pandemic. The Peace Celebrations fireworks earned Herbert enough money to buy a farm in Nelson, and so the fireworks factory was closed and the family moved north. The farm was not profitable and after five years the Bickertons returned to Wainoni and Herbert reopened the fireworks business, now trading as Bickerton's Flamos Fireworks.

On returning to Christchurch Ron Bickerton trained as a motor mechanic but also continued to be involved in the fireworks factory. In 1932 he took over full control of the business from his father, then in 1936, with plans for expansion, he formally registered the business with six other investors, together contributing £2250 capital. Success was not to be had however. There was competition from China and

Britain, regulations were tightened, and then, on 4th November 1936, a terrible fire broke out at the fireworks factory and destroyed most of the buildings, which were not insured. Sadly 17-year-old Miss Rose Roberts was severely burned and died three days later. Ron attempted to rebuild the business but was unsuccessful and in 1939 it went into voluntary liquidation. After the business was closed Ron took up a position with Blackwell Motors.

In 1939, just before the outbreak of World War II, Ron purchased a market garden property at 28 Horotane Road where he took up tomato growing alongside his work as a motor mechanic. In April, 1941 he received a surprise visit from the Government Analyst, Mr F J Grigg who had discovered from the Inspector of Explosives that Ron Bickerton was probably the one person in the country capable of making rockets, and rockets were desperately needed. The army wanted some that would rise to 500 feet and give off three brilliant white flares so they could be seen in the day-time.

The rockets were to be issued to Home Guard units. Wherever the Japanese happened to land, these rockets would be put up to mark the spot. Mobile armies situated at Burnham and Stewart's Gully would then rush to the scene and do their best to eliminate the invaders.

Ron agreed to make the rockets, so long as the army supplied the ingredients. Six army huts arrived at the Horotane Road farm, paper for the casings was ordered from Mataura, saltpetre came from stocks in Auckland, sulphur from Kempthorne and Prosser, black antimony was supplied from a mine near Reefton, charcoal was made from wood and Ron set to work.

In May and June of 1941, along with two helpers, Ron turned out more than 100 rockets. Some were launched into the sky above Horotane for altitude tests conducted by the Air Force, which caused concern amongst the local residents. One neighbour started a petition against the risky experiments, but was soon encouraged to cool off.

After testing, the army decided that it needed rockets that would rise to 1000 feet rather than 500 feet. Ron was unable to make them that large unless he could have specially strengthened paper casings made for him. Some were produced but were found unsuitable, so the army ordered rockets from overseas instead. These eventually turned up about two years after the Japanese threat had passed.

Aside from the rockets, Ron also made around 200 alert bombs, which were issued, three at a time, to the EPS wardens (Emergency Precautions Scheme, which was part of Civil Defence) who were to set them off around the city as a warning to civilians to seek cover in the event of an invasion. Sirens would follow. Some of these bombs were used to good effect when the Heathcote Home Guard made a surprise attack on the Phillipstown unit one night. A few were let off in Cathedral Square on VE Day (Victory in Europe Day), but fortunately there was never any need to put them to serious use.

In 1942 the army cleared its huts and stores off the Bickerton farm in Horotane. What was left of the gunpowder (an excellent fertiliser) Ron dug into his glasshouse, and life returned to normal, or as near as it could be in war time.

In keeping with the innovative traits he inherited from his grandfather, Ron Bickerton invented a machine for making tomato hooks

and also experimented with the forced ripening of green tomatoes by use of ethylene gas with high humidity and heat.

After the war, though no longer involved with the manufacture of fireworks, Ron set up and supervised the firing of both the Coronation and royal visit fireworks displays, and assisted with the Centennial display too. Ron's last fling at pyrotechnics was in 1957 when, with his younger son Bevan, he contracted to put on the New Year's Eve fireworks display at Picton. Ron Bickerton lived at Horotane Valley, growing tomatoes, up until 1955 when he sold up and moved to Beach Road in New Brighton.

So what happened to Ron's grandfather, the eccentric professor? After his wife, Anne, died in 1919, he invited a long-standing friend from Christchurch, Mary Wilkinson, to join him in England. They were married in London in 1920. Shortly before his death Bickerton was made professor emeritus of Canterbury College and granted an annuity of £120 by the New Zealand government. He died of toxæmia in London on 22 January 1929, survived by his second wife. His friend and former student, Ettie Rout, arranged for his ashes to be returned to Christchurch where they were deposited behind a brass tablet in the hall of Canterbury College (now the Great Hall at the Arts Centre).

Sources or information for this article include:

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