The legacy of Rudolf Hohneck: *'A lover of trees: A forester unique'*[1]

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Abstract

Born in California, Rudolph Hohneck came to New Zealand as a five year old in 1899. His early working life was spent gum-digging and climbing for kauri gum but he soon became involved in timber milling. In 1926 he began purchasing areas of cutover forest on the southern edge if the Hunua Ranges and over the next 30 years developed this into a productive forest.

Using Sir David Hutchins 1919 report -"New Zealand Forestry; Part 1: Kauri forests and forests of the North" as his guide he developed a selection system of managing the regenerating forest. His methods were much further ahead than New Zealand practice at the time where, contrary to the advice of professionals like Hutchins, the indigenous forests were largely ignored in favour of developing exotic monocultures.

In the late 1940's he took part in the debate on the future of the Waipoua kauri forest and his methods of management were outlined in a series of some 20 letters published by Auckland newspapers.

Rudolph Hohneck was the first forest land owner to see the real potential of New Zealand's indigenous forests and, although lacking any formal forestry education, he developed a management system which today falls squarely under the umbrella of Continuous Cover forestry. His legacy is only now coming to be recognized.

Origins

One of New Zealand forestry's least known but most colourful forestry characters was Rudolf Hohneck. But he was more than this, for he was the first person in this country to practice what we now call Continuous Cover Forestry. He was not a trained forester, but self taught, as in his earlier years he observed the forest while digging and later climbing for the valuable kauri gum and operating small sawmills. To aid him in his endeavours to make a living from the piece of cutover kauri forest that he later acquired, he had but one book; David Hutchin's *"New Zealand Forestry. Part 1"* . This he was wont to refer to as his bible.

Rudolf's origins were German. His paternal grandfather was a portrait painter in the city of Dresden and his father Ernest reputedly joined the German navy, later deserting and migrating to San Francisco where he settled down for a time and married Minnie, a local German girl. It was here that Rudolf, their third child, was born in 1894. Soon after this wanderlust struck again and Ernest left his young family and returned to sea. Minnie, eventually discovering that he was in New Zealand, came here with the children in 1899, after which two more children were born. The family first settled in Whangamomona in inland Taranaki, later moving to Hunterville. About 1905 and after the death of Minnie, Ernest moved his family to Northland where he farmed on various properties just north of Whangarei. In common with his brothers and sisters Rudolf probably received only 2 or 3 years education but obviously made good use of this as he wrote fluently and had good faculty for numerical work.

The early years

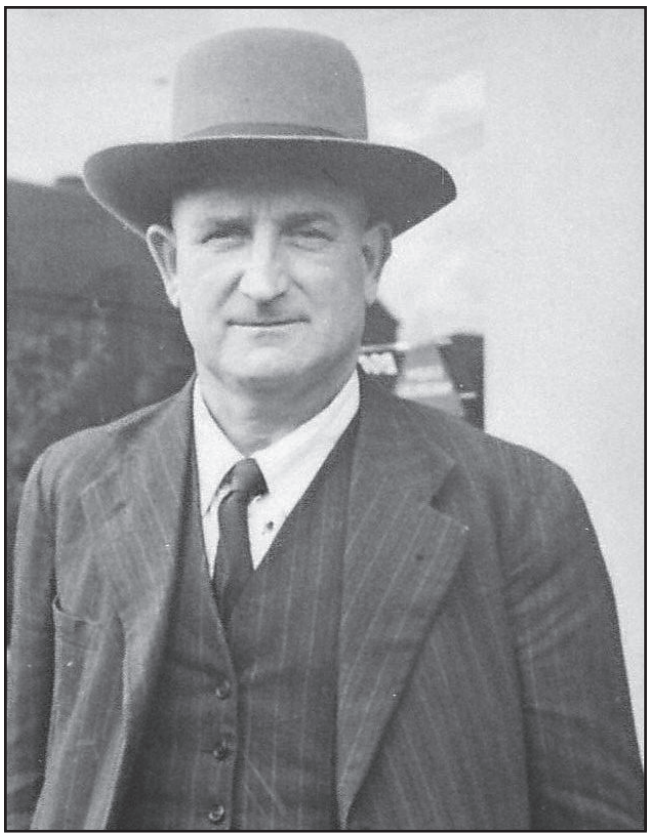

Fig 1: Rudolph Hohneck

Beginning work as a gum digger in the Kamo area about 1914, Rudolf, with his older brother Adolph had graduated to gum climbing within a few years. They would work in areas soon to be logged, climbing the trees and removing the gum from branch crutches in the crowns of trees. In areas where the kauri were very dense it was usual for them not to return to ground after removing the gum from one tree, but to use their climbing gear to swing over into the next

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tree. Rudolf ceased climbing in the early 1920's and turned his attention to logging and sawmilling. In 1923 he became a naturalized New Zealander and in 1926 bought a block of cutover kauri forest at Mangatawhiri in the southern Hunua Ranges, south-east of Auckland. Adding to this by buying adjacent blocks he had acquired 359 hectares by 1945. Over the years, but more particularly from the mid 1940's, Rudolf managed his forest by applying the principles he learnt from reading Hutchins while at the same time developing his own approach.

Until the end of the Second World War he appears to have extracted and sawn timber from his own forest as well as logging and sawing timber for others in the district. However, as time went on he did less outside work and began to concentrate more on his own property. He was not only trying to implement a new concept in forest management but was also working in isolation, outside of the forestry circles of the day, and so would have lived and died a relative unknown had it not been for the Waipoua controversy.

The Waipoua debate

By the end of the First World War Waipoua forest, in the far north, contained one of the few large remaining blocks of mature kauri left in the country. This was due in part to its relative isolation and the fact that it grew in an area of high rainfall which made it less vulnerable to the fires of gum-diggers. In 1920 a student at Auckland University, William McGregor, obtained a contract with the fledgling State Forest Service to investigate the ecology of northern forests and their potential for management to produce kauri timber on a sustainable basis. He did seasonal work for several years in the forest and produced a few interim reports but not a final one because he fell out with the Forest Service when they wanted to reduce the period and value of his contract. What McGregor did do however was to form the opinion that Waipoua should not be milled but, because it was the last forest of its kind on earth, be retained as a National Park. W.R. (Barney) McGregor, who in 1933 became head of the Zoology Department at Auckland University, was from the mid 1940's the most prominent of those fighting to retain Waipoua Forest in its natural state.

Because many people in influential positions were also of a similar opinion, Waipoua gradually became the focus of New Zealand's first major environmental debate. This had initially begun 20 years earlier when the Government of the day, led by the Prime Minister Gordon Coates on the northern boundary of whose constituency Waipoua lay, decided to put a road through the forest to give access to the farming lands between the forest and the Hokianga Harbour. Between 1924 and 1928 the debate went on but eventually the road was built right through the forest. There is no evidence to suggest that Rudolf took part in these earlier discussions but he certainly would have been aware of them. Waipoua then became a quiet backwater once more until the Second World War, when timber began to be removed for essential war purposes. There was but muted opposition to this but when the war ended and the removal of timber, mainly dead and dying trees continued the dispute over the future of the forest began in earnest.

By 1944 Rudolf had been observing kauri forests for 30 years and managing his own forest to produce timber for almost 20 years. He had already learnt a great deal and the debate on Waipoua, which began in the latter part of 1944, stirred his enthusiasm to write to the newspapers in defence of the Forest Service and to put forward his own experience and ideas as a counter to the largely emotional but well meaning outpouring of letters, articles and editorials which appeared in the daily press between 1944 and 1952.

The main debate occurred between 1944 and 1948 when letters which relate to the Waipoua controversy appeared in the New Zealand newspapers. Those seen so far total 135 and there are known to be many more. In addition there were at least 50 editorials and 240 articles on the subject. So far material has been found in 27 newspapers and periodicals from Northland to Otago. Of the letters seen 67% opposed management of the forest for timber production, 25% supported and 8% were neutral. Rudolf Hohneck, writing 20 of the supporting letters was the most active pro management supporter.

Rudolf had a few supporters in the great letter writing debate. One of these was H N Kitchingman of Erua and later New Plymouth. Like Rudolf he was self taught in forest botany and ecology and wrote cogently about the issue. In 1944 he commended Rudolf stating that he was *"... to be highly commended on the lucid manner in which he has dealt with the subject of forest regeneration."* However those opposed to management of the forest usually had a different perspective. *"Old Bushman"*, who claimed to have studied New Zealand bush for nearly 70 years and also destroyed his share of it, criticized Rudolf's advocacy of thinning as a means of encouraging regeneration and asked the question, *"What thinning was done to the splendid forests that flourished for untold centuries in New Zealand and which we destroyed in 100 years?"*

These two approaches, evident very early in the debate, epitomised the whole issue. In their own ways both sides of the argument were correct; it is possible to manage New Zealand's natural forests but they will then not be the same as the forest which is left to grow with no intervention by man. Those advocating the retention of Waipoua as a primeval forest early recognized this as their strong point and their arguments consistently followed the approach that Waipoua was the last of the mature kauri forests and must be protected in its entirety. The Forest Service and their supporters did not see a place for such forests, continuing to insist that they could manage the mature kauri forests and even going so far as to state that there was no value in them being locked up as "tree cemeteries". McGregor, continually attacking this approach, was more effective in rallying public support. He did not waver from this tactic and never seemed to debate the issues with those who were writing letters and editorials, preferring to preach his

message from the high moral ground.

An important feature largely absent from the debate was a lucid discussion on the ecology of the forest, although it was touched upon indirectly by Professor Chapman and one of his staff in the Botany Department of Auckland University, Dr L Milliner. This is somewhat surprising since the concept of ecology had been around since the late 1880's and the study of ecosystems had begun with Tansley in 1935. As well Leonard Cockayne had touched on the subject as early as 1910 in his book *"New Zealand Plants and their Story"*. What was quite obvious was that Rudolf, although he wrote about ecological matters, was for the most part ignorant of the ecological processes taking place in the forest and was very Victorian in his thinking; taking the approach that man must organize nature. In one of his early letters he wrote:

> *The idle bush is an unorganized society of living plants and living creatures, Creatures like deer and grubs are forest enemies. Man is the necessary policeman. Among the living plants courts of justice are needed. Man is the necessary judge. The king kauri is often a cruel tyrant. With rotten heart ad seedless head he will cling to office for a thousand years and crush back the forest children. The headman's axe is needed there. Many plants and trees work like busy bees and their work is good to see. Many are drones and should be cast without.*

His opinion, that there was no value in unmanaged forest, was strongly challenged by many who wrote letters in support of Waipoua being left in its virgin state, asking the obvious question, *"How then has Waipoua maintained itself for thousands of years"*.

Despite his lack of ecological knowledge Rudolf had, during many years working in the forest, absorbed the lessons of the forest; he came to understand how the regenerative process worked and this became the key to his success. However to him regeneration had two meanings, the dominant and earlier of which was the physical application of silvicultural techniques to restore a forest from a degraded condition. Only later did he come to realize that regeneration is an ecological process involving aspects such as natural disturbance of the canopy and forest floor which increases light, so allowing seed to germinate and seedlings to grow.

Rudolf's early view of the northern forests was that outlined in the quotation above. This view did not just apply to the cutover forest he was managing at Mangatawhiri but also to forests like Waipoua, which was not just a mature to over-mature forest of dense kauri but also contained large areas of other forest types and scrubland; in his opinion less then 5% of the forest was stocked with kauri, much of which was hollow and badly crowded. What he never appeared to realize however was that there are important differences between the ecology and regenerative processes of the mature kauri forest in parts of Waipoua and young forests regenerating through a tea tree nurse or a newly cutover forest similar to much of his own. This meant that the arguments he applied to the Waipoua debate were those he was learning at Mangatawhiri and, as we now know, may not have been applicable at Waipoua. And the seeming lack of knowledge of kauri forest ecology at the time meant that the university trained people contributing to the debate -Chapman, Milliner, McGregor etc- never appear to have commented on this issue.

In his letters Rudolf explained the regenerative processes he was applying at Mangatawhiri. He had observed very early on that nature tends to work in patches; areas of productive timber trees being scattered amongst those with little or no value. To extend these areas of productive forest he began to remove rotten and unproductive trees and felled some of the larger trees for timber as well as thinning out smaller trees to give those remaining more space. Trees identified as good seed producers were left. The overall aim was to get sunlight to the tops of the smaller trees and seedlings and to give these space to develop. (Figures 2, 3 & 4) Wherever possible he broke up the soil and mixed soil and litter to provide a good seed bed, attempting always to encourage the establishment of seedlings on non-productive areas. Where seedlings became too dense he would dig up and replant some in places where there were none. Once seedlings were well established in an area, the seed trees could be removed for timber. He also recognized the importance of nurse plants in the regeneration process stating that, *"Our best fellow worker in the bush is pretty little tea tree, gentle nursemaid to seedling kings."* In essence his philosophy was that disturbance, thinning and the removal of large trees benefits the forest; for the remaining trees grow faster and regeneration is more abundant.

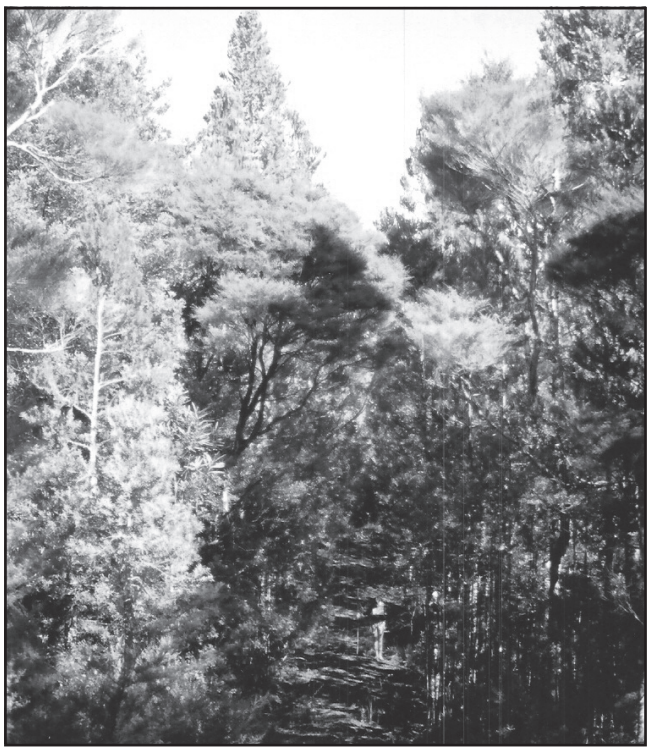

Fig 2

Fig 3

Records in letters

It is not known whether Rudolf ever kept written records relating to tree growth and if he did these have not been located. He did however know that mature untended kauri forests have no annual increment, that growth of larger trees is very slow and that small kauris in the shade were little better than broom-sticks after 100 years. Management however improves growth rate with all trees growing faster as do the smaller shrubs, ferns and mosses. He worked on the basis that every hectare of forest should carry several thousand seedlings but by the time these had reached the size of large poles there would be space for only 500, and as trees of 75 cm diameter only 250. When saplings were given full access to light and space he found height growth to be some 60 to 90 cm annually with diameter increments about 6.3 mm. Larger poles had diameter increments of over one cm. These growth rates are quite possible but to achieve them he would have thinned quite heavily in the early stages.

In one of his earlier letters he advocated managing forests on the strip system but there is no clear evidence that he actually did this and it is possible that he was simply repeating something he had read in a forestry text. (Note that although Hutchins mentions strip felling he does not go into the detail given by Rudolf.) However the text of the letter is worth reproducing because of the clarity with which he outlined the system.

> *For a ten year programme any patch of bush is divided into 10 strips, each one a chain wide. Strip No. 2 is attended to in the first year. Trees dead, hollow or over crowded are carefully removed. The timber and wood salvaged pays improvement costs. Sufficient young trees are left correctly spaced. The wild bush on either side casts seed on a good bed.*

Fig 4

> *That season may see this strip nearly stocked with young and seedling trees. To fill empty spaces crowded seedlings are dug out and reset. Thus we affect a wonderful and costless change. Gone are the deer that ravaged the bush unseen. Gone are the rotten wood homes of the grubs that kill, on autumn days, the green beech trees, so weakened with their crop of flower and seed.*
>
> *Strip No.4 is put in order the second year. In five years five alternate strips show five thriving stages. In nine years only one neglected strip is left, calling plainly for the helpful artistic hand of man. The grubs still linger there and the annual growth equals the annual decay. The inspiring contrast are the other nine strips, all a dense forest of perfect young trees of ever increasing value. The pattern given above can be widely varied if desired.*

It is likely that Rudolf did use the above process but modified it to an irregular patch system in order to fit with the very broken terrain of his forest. Combined with this was his concept of contour roading. Early on he realized that to successfully work his forest great care needed to be taken with access tracks and initially his tracks were built along the main ridges and spurs. However this could not give access to all of the forest so he began to contour track the forest from about 1945. The objective was to build terraced tracks along the contour about 50 metres apart which, as well as giving access to the forest, reduced erosion by controlling down slope runoff and provided firebreaks for times of drought. (Figure 5) Thus by combining both natural features and his contour tracks, he was able to effectively divide the forest into workable areas.

What then did Rudolf harvest from his forest which enabled him to employ at least one man most of the time and make a living? During the early years, most of which encompassed the depression, it is suspected that this would have been difficult and it seems that during this time he was based on the coast of the Firth of Thames, several miles

north of Kaiaua. Here he had a sawmill and seems to have been extracting timber from the bush adjacent to this mill. It is probable that while he operated this mill he also spent some time at Mangatawhiri working on improving the forest as outlined above. At some stage, probably about 1944, he moved the mill nearer to his property to a site on the Mangatangi Road and began to live permanently at "Kauri Gardens", as he came to call his forest. When wartime demands began to increase the value of his products, he probably worked there fulltime; but just what did he produce? According to published letters and reports and the recollections of relatives and colleagues, he sold anything that would provide a return; garden stakes, handles, turnery timber, mouldings, firewood, pit props and fencing material as well as sawn timber and saw logs.

As the needs of the military increased he found a ready market for firewood from both mill slabs and tea tree at the nearby Military camps, especially Papakura. In earlier years good kauri timber appears to have been sold as logs to Henderson and Pollard's mill in Auckland but after 1951, when Seacraft Ltd established a small mill on their property at Mangatawhiri, most of his timber seems to have been milled there; his own small mill having ceased operation some time before. (Figure 6) Most of the good kauri that he cut went to boat building and furniture manufacture while totara, generally cut from small trees about 70 cm diameter, was sold to a Papakura joinery factory.

He also had a very accurate idea of the productivity of his forest and how much it was worth. In one of his letters he estimated that the current value of unmanaged and poorly stocked forest was £1.0.0 per acre but that it could be increased over time to the point where it became worth 50 times that amount. A forest in full production he estimated to be capable of returning an annual income of £10 per acre in perpetuity. If we assume the annual increment of this forest to be 12m^3/ hectare (an increment easily achieved) when adjusted to 2006 values it becomes $1664 per hectare or $139 per m^3. This is probably lower than the present day value of kauri timber from trees up to about 70 cm diameter but the present scarcity value of the wood has pushed prices higher.

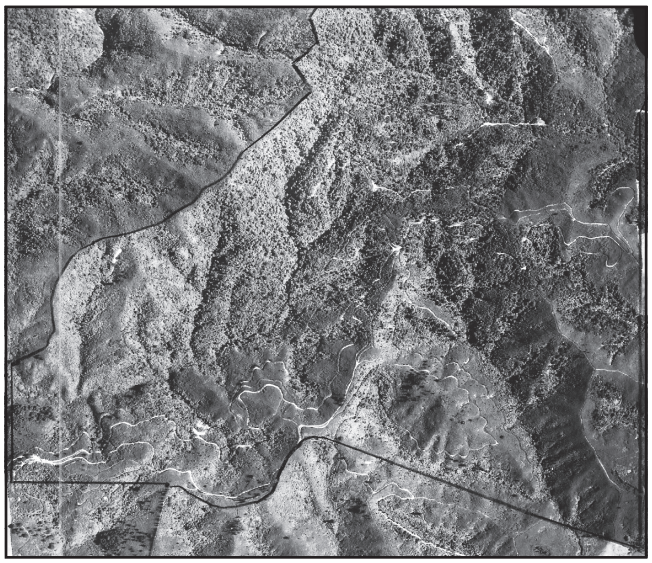

Fig 5

Postscript

Rudolf Hohneck was a man ahead of his time, at least as far as New Zealand is concerned, and because of this was sometimes seen by those of his time as an eccentric. In a history of the Buckingham family, who still farm in the Mangatawhiri valley below Kauri Gardens, we read;

> *I must mention … [people] …we considered characters in my younger time. One was an old chap by the name of Hoehnek (sic). He was a German by birth and he was a kauri farmer…he owned a thousand acres of kauri bush up the top of the valley. He really was a character…whether he was before his time or after his time I do not know. But he loved his bush, his kauri, and there was some beautiful kauri up on those hills… He was very friendly with our family both before the war and after… he used to come down because he loved a good meal now and then. He used to go through when you couldn't get across the creek… there was no bridge across the river then. He was quite clever, he was well read and he loved his trees but he's really perhaps only a character, but we considered him very eccentric… He was a little weird, but a kind, friendly, nice man who lived alone hidden in the bush, particularly during World War 2.*

Others, who perhaps had a greater appreciation of what Rudolf was doing, saw him somewhat differently. Lindsay Poole, later to become Director General of the NZ Forest Service, visited the operation as a student in the late 1920's and was impressed with Rudolf's ability to make effective use of very small logs, cutting kauri thinnings down to a 6 inch small end diameter. This was something not seen in those days when wastage in the native timber industry was still common and Lindsay considered this to be the reason for Rudolf's success.

In 1952 the Auckland Botanical Society were impressed during a visit to Kauri Gardens and in an article headed *"An insight into forest farming -visit to Mr R Hohneck's bush"* they wrote: -

> *The Botanical Society's sojourn at Mr Hohneck's Forest Farm at Pokeno was enjoyable, refreshing, and an interesting light was thrown upon the economic disposal of the bush. Here we witnessed an honest and, in fact, most successful endeavour to utilize native timber and at the same time conserve the forest.*

It is perhaps a little soon to pass definitive judgement on Rudolf Hohneck, for New Zealand has only recently begun to break out of its *Pinus radiata* straightjacket and begin to accept that forestry is more than just large scale, clear-cut monocultures. More years will need to pass until we can be sure, but a trend to manage at least some of our forests

Fig 6

according to continuous cover principles is beginning. If this continues and grows it is expected that his place as one of those who led the process to more enlightened forest practice, will be confirmed.

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It is not certain when timber was originally extracted from the forest later owned by Rudolf Hohneck but it was probably between 1900 and 1914.

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Most of these letters were also published in a booklet *The Waipoua Argument* by Ron Hohneck. Franklin Times Print, Pukekohe but because copies of this are very rare the basic references given here are to newspaper publication dates. Note that he often signed his name Ron Hohneck, especially during the war.

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Pers.comment and letter from Lindsay Poole 29 April 1996. Lindsay Poole was Director General of the NZ Forest Service from 1961 - 1971

Auckland Botanical Society Quarterly Newsletter 10 (1) Dec. 1952.

Acknowledgements:

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