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HALL'S ARBORETUM: THE LIFE AND TIMES OF JOHN WILLIAM HALL: PHARMACIST, BOTANIST, PIONEER NEW ZEALAND CONSERVATIONIST

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Introduction

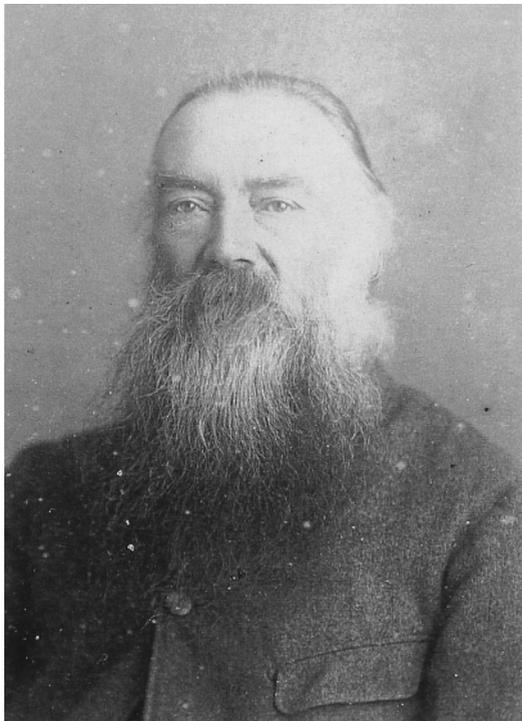
John William Hall was born in Peatling Magna, Leicestershire, United Kingdom on 26 January 1830. He was educated in his profession as a pharmacist in England, by the common means of that time - paying a premium (£95) to secure an apprenticeship (Frost 2004:91-94). He immigrated to New Zealand, arriving in Auckland in the ship “Egmont” in 1858. Hall engaged in farming at Mangere until the opening of the Thames goldfields in 1867, shortly after which he established his pharmacy in that town, trading under the name “J.W. Hall Chemist”. He lived the rest of his life in Thames and died there on 24 May 1915 (Frost 2004:91-94 , Unknown author 1902).

It was for his love of amateur botany and work as a pioneer conservationist that Hall was best known, however, rather than his pharmacist profession. In Thames, he established one of the first botanical arboreta (T12/1243) in New Zealand, had a species named after him (*Podocarpus hallii* - Hall's Tōtara) and was an early advocate of biological conservation: unusual in colonial times, when the national focus was very much on exploiting resources for economic gain. The 1913 Royal Commission on Forestry visited his arboretum and measured several trees; and he thus played a contributory role in the definition of New Zealand forestry policy and a strategy that spanned most of the 20th century.

Hall's early years in New Zealand

On arrival in New Zealand, Hall apparently tried farming (as did many immigrants): the *Daily Southern Cross* of 7 Feb 1860 published a Jury List

¹ This paper is adapted from an article in the Coromandel Heritage Trust Treasury Journal (2013) at <http://www.thetreasury.org.nz/JournalIndex.htm>



*Figure 1: John William Hall in later life
(Source: Hall family collection)*

which showed “*Hall, John William, Mungari [Mangere], farmer*”. Hall married Mary Pack, a fellow-migrant, from Woolsthorpe, England. The marriage took place at St Paul’s Church, Symonds Street, Auckland, on 21 January 1860. The officiating minister, who signed the register “GA N. Zealand”, was almost certainly Bishop George Augustus Selwyn, Bishop of New Zealand 1842-1868.

According to his obituary in the *Pharmacy Journal* (quoted in Frost 2004:91-94), Hall served in the home defence militia during the New Zealand Wars of the early 1860s. In 1860, Hall obtained a grant of Māori land at Mangatawhiri:

All that Parcel of Land, in the Province of Auckland in our Colony of New Zealand, containing by admeasurement One hundred and sixty Acres more or less, situated in the Parish of Mangatawhiri in the County of Eden and being Allotment No. Sixty five. Bounded ... on the South by the Waikato River ... (Turton 1860)

An enclosure to the document showed the acquisition of another two blocks in the same area: 66 (91 ha) and 69 (24 ha). These allotments are unlikely to have been as a result of Hall's military service, as the 1860 gazettal date would have preceded the Waikato campaign. In 1862, he sold the three allotments to the Crown.

The purpose of these land transactions is not readily apparent, and may have been pure land speculation, as was fairly common at that stage of the colony's history. Another possibility is that Hall sold the land to the Crown as part of preparations for the British invasion of the Waikato, as the Pokeno - Waikato River - Mangatawhiri Stream area was the scene of these activities. One of the blocks owned by Hall and Bassett was immediately to the west of what was to become Bluff Stockade, the original terminus of the Great South Road, and an important position for the defence of the Waikato River and the Pokeno logistics complex.

Supporting the hypothesis of general land speculation, the *Daily Southern Cross* of 23 June 1862 advertised for sale properties also owned by Hall and Bassett in Flat Bush (now part of Manurewa), Papakura, Whangarei and Onehunga. It is not apparent why Hall and Bassett appeared to part ways (at least financially) but the *Daily Southern Cross* of 26 May 1862 also advertised the sale of all stock and implements from the Mangere property.

While farming in partnership in Mangere, Hall and Bassett became prominent members of the New Zealand Agricultural Society and the Auckland Acclimatisation Society. There are several references in *Papers Past* about their contributions to meetings, including presenting talks on experimental horticulture; for example:

NEW ZEALAND AGRICULTURAL SOCIETY.

New Zealand Herald, Volume III, Issue 925, 31 October 1866, Page 5

CULTURE OF THE POTATO. Mr. Bassett was then called upon to read a paper on the cultivation of the potato. ...

Mr John Hall said he was making several experiments, and would be glad to give the results of those experiments to the society on a future occasion.

These references indicate Hall was interested, and participating in, experimental botany before he arrived in Thames.

It is not clear how Hall maintained a livelihood after 1862, but when the Thames goldfield was proclaimed open on 1 August 1867, he decided to revert to his original profession of pharmacist, and moved to Thames to open a shop there. According to Frost (2004:91-94): "Hall formed a partnership with a mechanic named Thomas Spencer; a man of means who knew little about

pharmacy". They opened a business named Spencer and Co, Chemist, on 21 December 1867, in premises situated in Willoughby Street. Various other premises and business partnerships followed (see Frost (2004:91-94) for details). It should be noted that a key function of a pharmacy situated on a goldfield was to provide assay services for the various mines and prospectors, and Hall's pharmacy fulfilled this function; at least while the field was still profitable (i.e. until about 1875).

An interest in botany

It was, however, his interests in botany and conservation for which John Hall was to become best known. According to Frost (2004:91-94):

All chemists were required to have a knowledge of botany, and sometimes developed a personal interest in the subject resulting in a study of plants and trees in their area. John Hall began to note the rate of deforestation in the Thames area, especially the large-scale removal of the Kauri and the general removal of trees for farming purposes [mining was another catalyst for large-scale destruction of vegetation]. He began to collect seeds of plants, trees and ferns to send overseas to collections in England ...

What was likely to have commenced as a professional interest in plants for medicinal purposes expanded into a life-long passion; especially in a new country with a vast range of botanical specimens, quite unlike those he would have been used to in the United Kingdom. Just when, or over what period, this interest developed is not documented, but the arrival of keen amateur botanist James Adams in Thames, to take up the position of Headmaster of Thames High School in 1880, appears to have had at least some influence on Hall (Adams 1954 (reprinted 1994)). Adams was Headmaster of the Church of England Grammar School in Auckland during the period 1872-80. During this time, he (Adams) established a close connection with Thomas F. Cheeseman, noted New Zealand botanist and curator of the Auckland Museum.

The extensive botanical exploits of James Adams are well outlined by Nancy Adams (1972) and his son Ernest (widely known as "E.F. Adams") (1954 (reprinted 1994)). What is important, regarding the Hall story, is his apparent influence on a Thames chemist with a developing interest in botany. The influence, and the ties that developed between the two families are evidenced by the inter-marriages that later occurred: "It gave him [Adams] great pleasure when his eldest son, E. F. Adams, married the daughter of his friend, J. W. Hall, an early resident of the Thames ..." (Adams 1972). Ernest (who became a prominent mining engineer and, later, Thames Borough Engineer) later married another of Hall's daughters (Ellen) following the death of his first wife Hannah.

The relationship between Adams and Cheeseman eventually led to a relationship between Cheeseman and Hall. This is evidenced by the extensive correspondence which developed between the latter two men - the earliest-known example of which was in 1887. The latest known letter between the two was written in 1913, two years before Hall's death.

One of Hall's key initiatives, and the one for which he will probably be best remembered, is the establishment of an arboretum (T12/1423), between what is now Mountsea Road and Brunton Crescent, in the foothills to the south east of Thames. This has been cleared and restored by the local Forest and Bird chapter, and with interpretation and publicity by the local Council, it is now an important tourist attraction.

The title of the paper Hall presented to the Auckland Institute (Hall 1901) implies that this work commenced in 1873. However, the early phase of the venture is not documented further (copies of his diaries now held commence in 1890). Despite this gap in the literature, the innovative and pioneering nature of the work is well documented in later references:

Early advocates of native plants

Between 1850 and 1900, [NZ] public gardens were dominated by exotic plants such as oaks, elms and roses. The first major collection of living native plants was started in the 1870s by John Armstrong, in the Christchurch Botanic Gardens. William Hall started a native arboretum (a collection of living trees) at Thames in Coromandel around the same time. The pioneer ecologist Leonard Cockayne championed the use of native plants in gardens and in 1924 wrote a popular guide to growing them. Later he was involved in setting up the Ōtari Open-Air Native Plant Museum at Wilton, Wellington."

(<http://www.teara.govt.nz/en/horticultural-use-of-native-plants/1>)

Hall's Arboretum contains an interesting mix of exotic and native trees, indicating he probably had no strong preferences for one type over the other. Examples of exotics in the reserve include Norfolk pine, eucalypts, English oak and macrocarpa. Examples of natives include kauri, tōtara, kahikatea, puriri and miro.

Hall also corresponded with like-minded individuals in the United Kingdom (Godley 1991). Carolyn Melling recalls (2002):

His letters describe a friendship with Captain Dorian Smith from Tresco Abbey in Scilly Islands, Cornwall, UK. Early NZ natives grow in this garden which would undoubtedly have come from Hall and some of the exotics in Hall's Reserve would have come from Tresco. My first introduction to Hall's Reserve was a conducted tour by DOC (Department of Conservation). They wanted the public opinion on what to do



Figure 2: Hall's Arboretum, 2015, showing the mix of exotic and native trees

with the exotics in the reserve, possibly removing them. This was the time we discovered the letters. So timely! Imagine if Tresco Abbey thought the removal of 100 year old NZ natives was a good idea!

Another achievement for which Hall has become well-known was his discovery of a variety of tōtara, which was subsequently named *Podocarpus hallii* (Hall's Tōtara). This name was first publicised by Thomas Kirk, in his seminal work *The Forest Flora of New Zealand* (Kirk 1889).

However, modern botanical literature lists an alternative name - *Podocarpus cunninghami* - for Hall's Tōtara. The reason that there are alternative names is that, apparently, the same species was named by different botanists at around the same time - Colenso (in 1884) and Kirk (in 1889). Dawson and Lucas (2011) infer that *P. cunninghamii* is now the preferred name.

Hall's self-taught expertise in botany was recognised, and resulted in an invitation to present a paper to the Auckland Institute (a forerunner to the Royal Society of New Zealand). In this, he summarised the rationale for, and success of, his experimental work (Hall 1901):



Figure 3: Hall's tōtara (left) and common tōtara samples, taken from Hall's Arboretum, c.2013. The difference in leaf sizes is apparent.

It is much to be regretted that a well-organized arboretum for indigenous trees and shrubs has not been established in each of the great centres of population. The extensive, and frequently wanton, destruction of the native bush has been going on at such a pace that it will soon be difficult, if not impossible, to get sight of some of the rarer species. And, unfortunately, the planting of our beautiful New Zealand trees has not generally been adopted, perhaps from the mistaken idea that they are difficult of culture. Partly to disprove this, but principally because I had a great liking for the occupation, I some thirty years ago, began a plantation on a piece of land at Parawai, Thames.

...

One object in making these plantations was to induce the visits of our rapidly disappearing native birds. The frequent visits of the riro-riro, the piwakawaka, and the kotare, with occasional incursions of the ruru, the tui, and the pipiwharauoa, and still more rare appearance of the kaka, kukupa, kohoperoa, weka, and miromiro, have amply repaid my expectations.

In conclusion, let me express a hope that these few cursory remarks may induce others to attempt the cultivation of our indigenous flora.

An item of particular interest is that Hall reported he had been able to propagate native trees by means of cuttings, as well as the usual method of germinating seeds:

It may not be generally known that the puriri and totara; and doubtless many others, can be grown from cuttings. Surrounding part of my plantation is a well established totara fence grown exclusively from cuttings. (Hall 1901)

Yet another notable feature of Hall's life was his role as a pioneer conservationist: in a colony and at a time when exploiting resources to gain economic advantage was considered to be of paramount importance. In fact, that was the fundamental reason for European nations to seek remote colonies in the 18th and 19th centuries - to harvest resources for the Industrial Age, which



Figure 4: Hall's tōtara 'fence' in 2015

was then well under way. For an individual to advocate restraint, and protection of endangered species, was somewhat akin to heresy. However, that didn't seem to bother Hall. His Letters to the Editor of the *Thames Star* were numerous, and covered many subjects relating to conservation, for example:

Thames Star, Volume XLIV, Issue 10531, 2 May 1907, Page 2

CORRESPONDENCE.

TO SPORTSMEN

(To the Editor.)

Sir,—A week or two ago in remarking on the increase of ducks, and the probability of good sport in the coming season, you mentioned in the next paragraph that bitterns also were increasing. Lest this should lead to the misconception that bitterns may be shot will you please draw attention to the fact that they are included in the list of protected birds.—I am etc.,

JNO. W. HALL.

P.S.—From a long list published last year, I select those interesting to sportsmen, and which are absolutely protected: Avocet, bitterns, blue duck, white herons, blue herons, crested grebe, dotterel, knot, oyster catcher, plover, stilt plover, rail, sand piper, snipe, turnstone.

The last noteworthy aspect of Hall's work took place less than two years before his death. In 1913, the New Zealand Government created a Royal Commission on Forestry (RCF), which was charged with charting a forestry policy and strategy for New Zealand for the long term. Since the arrival of European settlers, some hundred-plus years before, forestry was based on exploitative colonial practices, which were concerned purely with harvesting resources for the parent industrial economy. According to Salmond (1997: 237-8):

In the economy of European colonialism, gold and silver headed the list of desirable 'goods' to be acquired by imperial expansion. Then came the materials required in warfare - saltpetre for gunpowder, and the timber and flax required for the hulls and riggings of naval vessels, and as sails and fabric for uniforms.

By 1913, it was apparent that native forests were rapidly being exhausted, and prompt action was required to ensure the new nation didn't run out of timber. As part of its deliberations, a small sub-set of Commission members visited Hall's Arboretum:

On the 9th April your Commission again divided... Dr. Cockayne went to Thames, where, in company with Mr. J. W. Hall, they inspected an interesting mixed plantation of exotic and indigenous trees planted by that gentleman forty years ago. This plantation is of special interest since an account of the rate of growth of the trees has been published in the Transactions of the New Zealand Institute, Vol. 34, p. 386. (Unknown author 1913)

Fifteen of Hall's trees were measured by the Commission, a mix of exotic and native. Results were included in Appendix D to the Commission's report, along with measurements made in other locations. A remark made alongside the measurements from Hall's Arboretum indicates the importance of these results:

These trees planted by Mr Hall serve perhaps as no others in New Zealand to illustrate the rate of growth of some exotic trees in comparison with our own native forest trees (Unknown author 1913 Appendix D p.2)

2015 arboretum site visit

In April 2015, nearing the 100th anniversary of John Hall's death, the author, assisted by Carol Fielding (local historian and botanist), re-measured nine of the 13 tree species which had been measured in 1913. It was difficult to ascertain exactly which trees were measured 102 years ago, but the largest specimens remaining were chosen. (It was assumed that the RCF would have measured the largest specimens on offer, as they were trying to determine which trees would grow fastest in what conditions. However, they did measure two kauri and two common tōtara of significantly different dimensions, which indicates they were probably trying to establish a range of sizes for the two most likely contenders for natives to be cultivated.)

Detailed results are held by the author, and will be passed to interested botanists and foresters. A summary of the 2015 results, compared with the 1913 measurements, is charted at Appendix A. It is apparent that specimens planted over 140 years ago are still growing strongly, although the kauri (*Agathis australis*) measured in 2015 appears to be damaged or dying at the crown.

The main point of the re-measuring exercise, aside from memorialising John Hall at the centennial of his death, was to remind readers that a living arboretum of botanical specimens is an important part of the body of knowledge of that academic discipline. Specimen collections are also an important repository of knowledge in other scientific disciplines; particularly those of a practical nature, such as medicine, engineering and geology. Hall's Arboretum has remained substantially intact for over 140 years: 40 years after its creation,



Figure 5 *Sequoia (Wellingtonia gigantea)* 2015



Figure 6 *Kahikatea (Podocarpus dacrydioides)* 2015

it contributed to the definition of New Zealand forestry policy and strategy, which led to the creation of the New Zealand Forest Service in 1919. Properly protected and managed, the arboretum has the potential to continue to be a comparative reference site for New Zealand native and exotic botanical specimens for perhaps another century, or even centuries, to come.

John Hall was a noted amateur botanist, pioneer conservationist, pharmacist and family man. His environment was a challenging one, being an early settler in a gold mining community at a time when conservation of natural resources was an almost unheard-of concept. The final sentence of the epitaph seems fitting for John William Hall:

Whatsoever thy hand findeth to do

Do it with all thy might

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Appendix A

