

# Uncovering the mysteries of 'Podocarp Valley' (Auckland Botanic Gardens): the story of the John Bruce Hair Podocarp Collection

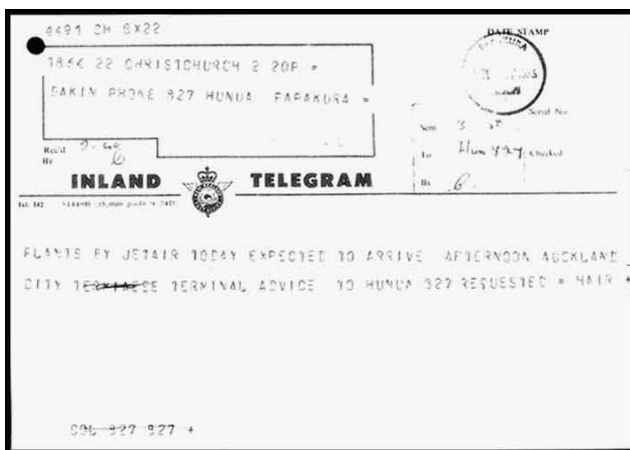
**Emma Bodley, Mike Wilcox and Bec Stanley**

We first heard of Dr John Bruce Hair (1909-1979) when looking through old forestry records from the Hunua nursery. The records showed that a collection of exotic podocarps were given to Auckland Botanic Gardens in the late 1980s from the Hunua nursery who had received them from J. B. Hair. We were curious about the person who gifted us these unusual plants.

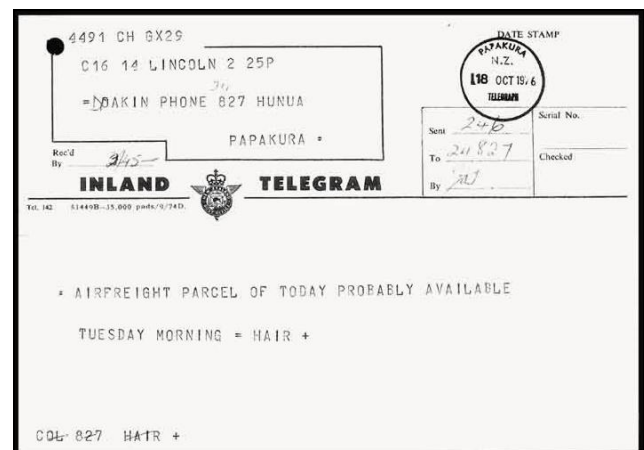
John Hair studied at Canterbury University College in 1934 and graduated with an MSc with First Class Honours. His thesis was published with Otto Frankel in February 1937. Hair's work on *Hebe* was considered 'pioneer work' and he found a large number of artificial crosses between species of the same and different chromosome numbers (Frankel & Hair 1937, Godley 1999). Dr Hair worked in the Botany Division of D.S.I.R. in Christchurch, New Zealand. His first job as a cytologist began in 1953 with the study of New Zealand conifer chromosomes. There he researched plant genetics, in particular publishing a number of papers on the chromosomal counts of New Zealand flora (*Hebe*, *Veronica*, *Poa*, grasses), Australasian orchids and wheat. He published his research in the *New Zealand Journal of Botany*, the *New Zealand Journal of Science & Technology* and *Nature*, and contributed significantly to the chromosome atlas of the New Zealand flora (Frankel & Hair 1937, 1938, Hair & Beuzenberg 1958, 1961, Hair 1966). Hair retired in 1974 but continued to be involved in conifer research, the Director (Eric Godley) leaving him a small work space in the laboratory at Lincoln. In a letter to Andrew Dakin (the nursery manager at Hunua) in 25 May 1997, Hair mentioned a hiatus in their

correspondence as he struggled with ill-health. He died not long after at Princess Margaret Hospital in Christchurch. As well as his passion for cytology, Dr Hair was an enthusiastic rugby supporter and played in the senior rugby team at Canterbury University. He spent many Monday mornings discussing the latest game with Brian Molloy and Eric Godley (Brian Molloy pers. comm., Aug 2014). We know very little else about Dr Hair's life and work. We found a short obituary in the *New Zealand Genetical Society Newsletter* which describes him as a quiet and conscientious worker (Thompson 1979).

Dr Hair's original conifer collection was housed at Linwood nurseries of Parks and Reserves, at Lincoln and Ilam. Margaret Bulfin suggested to Dr Hair that Hunua or another Auckland site would be a good place for the conifer collection. Rotorua Forest Research Institute was deemed an unsuitable climate for the conifer collection. Phil J. Jew, Manager of Parks and Reserves, wrote to Dr Hair on 5 October 1976 accepting the offer of some podocarps as a trial at the Regional Botanic Gardens in Manurewa on the suggestion of Joan Dingley of D.S.I.R. However, the decision was to send them to Hunua as it was the only suitable location for the specimens, as ABG was in its early days and was not ready to take on such a specialist collection. Prior to Hair's death, a number of podocarps were sent to Hunua on the 11 October 1976 by jet airfreight, arriving at Auckland City Terminal around midday. A telegram was sent to Andrew Dakin to notify him of their expected arrival (Fig. 1). A second parcel of plants were sent a week later on 18 October 1976 with a telegram sent to Dakin at Hunua (Fig. 2). We have a hand-written



**Fig. 1** Inland telegram from J. B. Hair to Andrew Dakin at Hunua, dated 11 October 1976.



**Fig. 2.** Inland telegram from J. B. Hair to Andrew Dakin at Hunua, dated 18 October 1976.



**Fig. 3. Bec, Emma and Mike identifying and tagging podocarps in the garden. Photo: Natasha Salt, 19 Aug 2014.**



**Fig. 4. Striking new red growth of *Podocarpus milanjanus*. Photo: Natasha Salt, 19-08-2014.**

letter from Dr Hair to Andrew Dakin dated 18 October 1976 explaining the state of the plants, background and cultural notes about the species intended for Hunua Nursery. In 1977 the University of Auckland Botany Department expressed an interest in having some of the collection for their grounds; it is not known what came of that idea. Hair had hoped he would one day be able to visit the collection of conifers at Hunua, but his death in 1979 prevented this.

On 28 October 1980 Brian Molloy asked Andrew Dakin to provide him with a list of those species remaining at Hunua. The podocarp species at Hunua Nursery from Dr Hair's conifer collection, as of 6 January 1981, included *Dacrycarpus imbricatus* (syn. *Podocarpus imbricatus*), *Dacrycarpus vieillardii* (syn. *P. vieillardii*), *Falcatifolium falciforme* (syn. *Dacrydium falciforme*), *Nageia nagi* (syn. *P. nagi*), *Ptherosphaera fitzgeraldii* (syn. *Microstrobos fitzgeraldii*), *Podocarpus affinis*, *P. alpinus*, *P. archboldii*, *P. brassii*, *P. elongatus*, *P. longefolius*, *P. macrophyllus*, *P. milanjanus*, *P. neriifolius*, *P. novae-caledoniae*, *P. pilgeri*, *P. polystachyus*, *P. rumphii*, *P. salignus*, *P. spinulosus*, *Prumnopitys montana* (syn. *P. montanus*) and *Saxegothea conspicua*. Species of Cupressaceae Dr Hair had included were *Diselma archeri*, *Fitzroya cupressoides* and *Papuacedrus papuanus*. A letter dated 12 January 1981, from Brian Molloy to Andrew Dakin, mentions that more podocarps were to be sent to Hunua and duplicate species would be offered to Christchurch Botanic Gardens. Some of the species at Hunua arrived at ABG around 1983 when the Hunua nursery was preparing to close by 1985, and were planted 25 September 1985, according to the ABG accession book. They were planted in 'Podocarp Valley'.

We (RS & EB) were curious about how these podocarps had prospered, almost 30 years later, and spent an afternoon in 'Podocarp Valley' trying to find

them. We located several podocarps that were not labelled and their identity was a mystery. In 1985 the Gardens had an accession book and numbering system but the tags and database we use today are more rigorous at tracking individual plants. Mike Wilcox offered to help us work out which podocarps we had (Fig. 3). Pressed specimens of several different species, as well as species lists from J. B. Hair's records, were sent to the Auckland Museum Herbarium to help identify our ABG podocarps that are still alive in the collection (Table 1). There are a few other species that ABG received but are no longer in our collection (*P. brassii* (CHR 102526), *P. polystachyus* (CHR 101665), *P. salignus* (CHR 102523), *P. novae-caledoniae* (CHR 200127, CHR 200126) and *P. elongatus* (CHR 101607)). *Podocarpus novae-caledoniae* was collected by Hair himself on 5 December 1955 on a roadside in Tontoua Valley, New Caledonia. The Allan Herbarium records showed us that the podocarps at ABG were grown from wild material that John Hair and Peter Wardle collected from 1955-1969 (Table 1).

You can visit J.B. Hair's collection (listed in Table 1) in 'Podocarp Valley', near the African Garden. *Podocarpus neriifolius*, commonly known as the brown pine, is the most widespread species in the family Podocarpaceae, and is found throughout Asia and the Pacific. Peter Wardle collected this material from Mt Giluwe, Papua New Guinea in 1969. *Podocarpus macrophyllus* var. *maki* originates in Japan. *Podocarpus longefolius* is from New Caledonia. It is a common canopy species in high rainfall environments. *Podocarpus milanjanus* is widespread throughout tropical Africa and is locally common, particularly in montane forests. It has striking red new growth (Fig. 4).

We are also interested to hear from anyone who knows more about J. B. Hair or other locations around New Zealand that have some of his

**Table 1. List of specimens that can be found at the Auckland Botanic Garden, together with their voucher numbers at Auckland Museum (AK) and Allan (Lincoln) (CHR) herbaria.**

Species	AK Herbarium	CHR Herbarium	Collected origin
<i>Podocarpus longefoliolatus</i>	AK 355229	n/a	Unknown
<i>Podocarpus macrophyllus</i> var. <i>maki</i>	AK 355231	CHR 200125	Eastwoodhill, Ngatapa
<i>Podocarpus milanjanianus</i>	AK 355228	CHR 200217	Unknown, but a specimen is held at Kew Herbarium (1915-28101)
<i>Podocarpus neriifolius</i>	AK 355230	CHR 102530, CHR 102526 C	Mt Giluwe, New Guinea

collections. There are only one or two of each species at ABG and it is possible that we have the last remaining plants in New Zealand, therefore conserving these plants is very important. We hold copies of many letters between A. Dakin and J. B. Hair discussing in depth this important conifer collection, which is available for anyone to read if they are interested.

### Acknowledgements

Brian Molloy, Murray Dawson, and Sue Davison have helped us try to find more information about J. B. Hair. Ian Barton and Jack Hobbs have helped us piece together the movement of the plants once they'd arrived in Auckland. Ines Schonberger very helpfully and promptly organised the data entry of the herbarium specimens at CHR to enable us to find the wild origin of Hair's podocarps.

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## The epiphytic water world of *Collospermum hastatum* (Colenso) Skottsb.

Sarah A. Killick, Dan J. Blanchon, and Mark F. Large

### Introduction

Epiphytic plants are often adapted to hold water, either in leaf axils, or in some sort of central cup (Richardson 1999). These bodies of water (called phytotelmata) (Fig. 1) frequently provide habitats for communities of aquatic microorganisms. Bromeliads, commonly grown as house and garden plants in New Zealand, are the most frequently studied group of phytotelmic plants (Frank & Lounibos 2009; Jocque et al. 2010; Brouard et al. 2011; Panizzo 2011).

Many gardeners will know that bromeliads provide a habitat for mosquitos, so it is not surprising to

discover that a wide diversity of macro-invertebrates have been recorded from plants in a natural habitat. These include members of the Turbellaria, Rotifera, Nematoda, Annelida, Crustacea, Odonata, Hemiptera, Orthoptera, Diptera, Coleoptera, Hymenoptera, Hemiptera, Lepidoptera, Dermaptera, Blattodea, Isoptera (Frank & Lounibos 2009; Torreias & Ferreira-Keppler 2011) and Arachnida (Mogi 2004). These macro-invertebrates support amphibians in both mature and immature life stages (Wittman 2000). The high level of invertebrate diversity is, in turn, partly dependent upon algae as a source of nutrition (Brouard et al. 2011).