

Profile of a horticulturist: Bob Berry, creator of Hackfalls Arboretum

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Fig. 1 Bob Berry attaching a label to one of his beloved trees at Hackfalls Arboretum. Photo: Wilma Verburg.

Introduction

Nestled in the hills on the inland road between Gisborne and Wairoa, lies the picturesque settlement of Tiniroto. Upon arrival from Gisborne one is greeted by a landscape of neat pastures, framed with rows of Lombardy poplars. A signpost directs you to Hackfalls Arboretum, the life work of farmer and tree lover Bob (Robert) James Berry (Fig. 1). Today the arboretum, spread over some 50 hectares of the Hackfalls Station (Fig. 2), is home to some 3000 trees,

notably comprising the largest collection of oaks in New Zealand along with many other rare species (Fig. 3A–B).

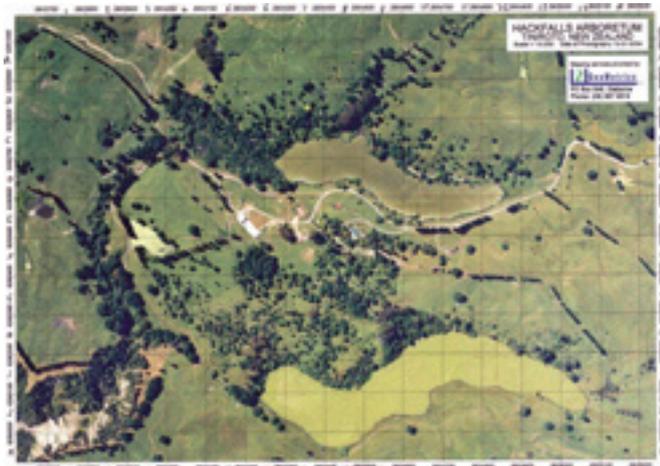


Fig. 2 Aerial image of Hackfalls Arboretum. Photo: GeoMetrics, 12 Jan 2004.

Hackfalls Arboretum is situated at an elevation of 270 metres above sea level and receives 1600 mm rainfall annually. The soils are derived from Taupo Ash overlaid on clay mudstones. The station covers some 800 hectares; 50 hectares are dedicated to the arboretum and a four hectare forest remnant is protected by a QEII Conservation Covenant. A series of lakes enhance the property.

The Berry family acquired the property in 1916 when Bob was just a child. His father broke in the land with continuous hard labour. Having attended only primary school, Bob was to have limited access to communal school activities, being home taught on the farm during his secondary school years. So team sports were not among his experiences.



A



B

Fig. 3 Trees at Hackfalls Arboretum. **A**, view to south-west from square H9 (Fig. 2); purple-red autumn leaves on the right are on *Quercus imbricaria* while the red foliage further right is on *Q. mongolica*. **B**, view to south-east toward homestead with Whakapunake mountain (961 m) on the horizon. Photos: Bob Berry.

Bob's interest in horticulture was encouraged by his mother and uncle, who were interested in gardening and keen on plants, but until the death of his father in 1954, the notion of tree planting over the farm was limited and Bob could only sneak in the odd tree. The earliest formal tree planting was that of an oak, *Quercus robur*, distributed by the Women's Institute to mark the Jubilee of King George V. Acorns were brought to New Zealand from Windsor Great Park in England but as there were insufficient to go around numbers were augmented by acorns from Hagley Park in Christchurch. The tree at Hackfalls was planted in 1935 and is now greater than 20 metres tall. There continues to be speculation that this tree might actually be from the Windsor collection.

The Lombardy poplars (*Populus nigra* 'Italica') that characterise the Tiniroto District were introduced by a Scots nurseryman, Bobby Sinton, one of the first permanent settlers in Tiniroto. The poplar's rapid growth provided a source of living fence posts for farm

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development and in due course the trees made exceptional autumn colour displays until the introduction of poplar rust decimated and affected so many stands throughout New Zealand.

Tree planting stimulated

Membership of both the Farm Forestry Association and the Royal New Zealand Institute of Horticulture provided special insights into the way trees could be used in farm landscapes. But it was an Institute visit to Eastwoodhill Arboretum in 1953 and meeting the owner William Douglas Cook that sparked the friendship that really launched Bob's tree planting campaign. That Eastwoodhill association has continued for more than sixty years. The first visit showed just what could be done with trees in the landscape and Douglas Cook found a man who shared his passion for trees. Cook generously offered free access to seed from his trees which included a major collection of oaks, many imported from Hillier's Nurseries in Great Britain.

As you arrive at Hackfalls you drive around one of the lakes and up to the site of the farm's main residence. From this elevated site you look down across the lake to some of the early plantings designed to provide a display of autumnal colour reflected in the water (Fig. 4). Not surprisingly plantings of *Nyssa sylvatica* (black tupelo), dating back to 1956, and *N. sinensis* (Chinese tupelo, planted 1978; Fig. 5), take pride of place.

Oaks and maples were favoured among Bob's collections and while not many maple species were available early in the planting programme, the resource of oaks at Eastwoodhill provided a starting point. The planting strategy was simple. As a working farm it was not possible to fence off areas for planting but rather individual plants were given protection and spaced widely so that the stock could continue to graze. Seedlings were always planted out as small plants. Bob reasoned that tap roots could develop early and seedlings in nature did not need watering. Hickories (*Carya* species), notably difficult to establish because of their long tap root, were lifted carefully by digging down deep beside the plant to get as much of the tap root as possible.

An equally deep hole was made for planting. Likewise the establishment of eucalypts often suffered through transplanting, so seeds were sown *in situ* and later reduced to single plants – no watering required. This strategy was applied throughout the 60 years of planting.



Fig. 4 Tiniroto Lakes at Hackfalls, surrounded by trees in Autumnal colour. Photo: Bob Berry.



Fig. 5 *Nyssa sinensis* (Chinese tupelo), an 8 m tall tree planted in 1978 showing full autumn colour. Photo: Bob Berry.

Hybrid poplar collection

Under the leadership of its founder Neil Barr, the Farm Forestry Association gave members the opportunity to see farm forestry practice in other areas of New Zealand. This organisation was central in efforts to use trees to stabilise eroding land. When poplar rust emerged late in the 1950s there was a rush to find alternatives. European hybrids were first introduced and supplied by Goudie's Nurseries of Rotorua in 1946 along with *Populus yunnanensis* (Yunnan poplar; Fig. 6A–B) and *P. trichocarpa* (black cottonwood; also known as western balsam poplar). A research station was established at Akoutere

near Palmerston North specifically to breed rust resistant cultivars. As each of the resultant new cultivars became available they were collected and added to the Hackfalls collection. Each of these acquisitions is catalogued and labelled (some 220 accessions) and today this is probably the most complete collection of the hybrid poplar gene pool in New Zealand.



Fig. 6 *Populus yunnanensis* (Yunnan poplar), an 18 m tall tree planted in 1946. A, trunk of 115 cm diameter. B, foliage. Photos: Bob Berry.

Douglas Cook of Eastwoodhill imported new species of trees and shrubs mainly from Britain but also from sources in the USA. He was generous in sharing any surplus seed with like-minded colleagues. The growing collection at Hackfalls was one beneficiary and Bob recalls receiving cuttings of the American Stout-Schreiner poplar hybrids and being billed five pounds. Cook used that sum to make him a member of the fledgling Pukeiti Rhododendron Trust. In addition, Gisborne was the base of Peter B. Dow Seed Company whose catalogues of the 1960s featured a wide variety of tree species, many of interest for enlarging the Hackfalls collection.

Bob quickly realised how well oaks grew in the district and collected more acorns from commercial seed suppliers as well as the Melbourne Botanic Gardens. Like Eastwoodhill, the Hackfalls collection also included species imported from Hillier's Nurseries in England.

The International Dendrology Society

In 1977 the International Dendrology Society (IDS) toured New Zealand and visited both Hackfalls and Eastwoodhill. The tour was organised by Lady Anne Palmer, a keen English plants woman who organised tours around the world with the IDS. Douglas Cook was an early member after the Society was formed in 1951 by a group of tree enthusiasts from Belgium, Holland and Britain. The Society organised tours for members all around the world and it took very little persuasion for Bob to join the IDS. In later years he would marry Lady Anne who gifted her family home, 'Rosemoor', in Great Torrington, North Devon, to the Royal Horticultural Society before returning to live in New Zealand and becoming a staunch advocate for the merits of the Hackfalls collection.

On a dendrology tour to Japan and Korea in 1980, contact was made with Carl Ferris Miller of the Chollipo Arboretum in Korea. Records show that many new tree seeds were received via this source. This relationship gave access to many species of maple and collections made in Taiwan. *Paulownia kawakamii* (the sapphire dragon tree) was first introduced into New Zealand from this source along with *Photinia davidiana* (Fig. 7). Other dendrology tours gave opportunities to see natural forests of Mexico, Northern Ireland, and the Eastern United States.



Fig. 7 *Photinia davidiana* var. *niitakayamensis* (syn. *Stranvaesia niitakayamensis*), a 7 m tall tree planted in 1980. Photo: Bob Berry.



Fig. 8 *Quercus rugosa* (the netleaf oak). A, tree. B, foliage. C, leaves. Photos: John von Pein.

The Mexican oaks collection

Over many years Bob Berry had been engrossed in the study of trees and owned a copy of *The American oaks* by Trelease (1925). This work indicated that Mexico was home to the largest range of oak species in the world; some 200 species. The only Mexican oaks known then in New Zealand grew at McLaren Falls in the Kaimai Ranges where a group of imported *Quercus rugosa* (the netleaf oak; Fig. 8A–C) had been established. Seeing the success of this group made Bob realise that these oaks would survive at Hackfalls and he planted his first specimens in 1975.

The chance to join the Dendrology Society tour to Mexico arose in October 1981 and in the company of Ian McKean of Rangiwahia Station (north of Feilding and Kimbolton), Bob joined the tour. McKean was interested in sourcing collections of the Mexican pines for his pinetum. Four species of oak were collected and planted immediately on return to New Zealand.

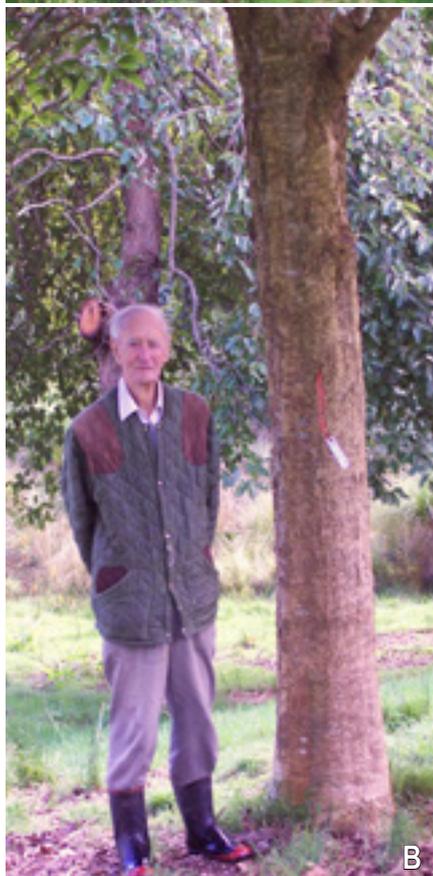
Some had germinated by January 1982 and specimens flourished at Hackfalls in the well drained volcanic soils. This led to a series of return trips to Mexico where a driver was engaged to tour the mountainsides. Most collections were obtained from roadsides where oaks were in second growth after earlier clearances.

In 1982, in the company of Peter Murphy of Panikau Station southwest of Tolaga Bay, Bob embarked on a two week tour in a hired taxi travelling hundreds of miles around Mexico. The result was a collection of some 800 acorns all carefully checked under a magnifying glass to make sure they were pest free. They were planted under MAF supervision with each quarantine inspection fully charged for. Although always armed with permits before leaving New Zealand and furnished with Mexican Health Certificates, acorns were presented for fumigation on arrival at Auckland. Many did not survive the process. Biosecurity regulations today effectively prohibit the importation of further oak species new to New Zealand.

A large collection of some 50 Mexican oak species has now been established. The renown of this collection, now regarded as the largest in cultivation in the southern hemisphere, resulted in the visit of Allen Coombes in 2004. Coombes, a British expert on the subject, evaluated the collection and confirmed the identity of species and a range of natural hybrids. He commented,



A



B



C

Fig. 9 *Quercus insignis*, planted in 1989. **A**, tree with Bob Berry standing underneath. Photo: Diane Playle. **B**, trunk with Bob Berry alongside. Photo: Diane Playle. **C**, leaves. Photo: John von Pein.

“I was impressed by the range of species he was growing there and by the size and growth rate of the trees. Just considering the oaks this is a collection of international significance and many of those I have found I have not seen better plants in gardens since. Bob has the insight to start collecting the Mexican oaks long before most. Many of his plants are now represented as specimens in the Harold Hillier Herbarium.”

Between the age of 12 and 15 years the oaks began to produce fruit so a source was then available for distribution. Eastwoodhill Arboretum in particular and other collections were supplied with seedlings both from original collections and subsequent seed crops. Many of these oaks have brightly coloured new foliage and make fine landscape trees. Among the many images in the Hackfalls catalogue are a comprehensive selection of the Mexican species showing both leaves and acorns. Appleton’s Nursery in Nelson is supplying oak seedlings originating from the Hackfalls collection.

The largest of all acorns belongs to one of the tallest Mexican species, the 30 metre tall *Quercus insignis* (Fig. 9A–C). While it has not yet fruited at Hackfalls, it ranks the favourite tree of Bob Berry along with *Quercus rysophylla* (the loquat leaf oak; Fig. 10A–D).

Today these oak trees make handsome specimens in the farm landscape of Hackfalls along with the remainder of the collection of maples and many other rare trees. There is a special case to ensure the long term preservation and conservation of this unique gene pool of oaks for New Zealand.

Hackfalls and Eastwoodhill collection recording

Over the years of development at Hackfalls, Bob Berry maintained accurate records starting with a handwritten list in 1963. Catalogues have been subsequently maintained and updated from the first typewritten records in 1972 followed by a succession of computer-generated word processor catalogues from 1993 onwards. In 2008, at the age of 92, Bob Berry started preparations for converting his catalogue to the FileMaker Pro database system



A



B



C



D

Fig. 10 *Quercus rysophylla* (the loquat leaf oak), planted in 1990. **A**, tree. Photo: Bob Berry. **B**, trunk. Photo: Bob Berry. **C**, foliage. Photo: Bob Berry. **D**, leaves. Photo: John von Pein.

which today includes photographs of many key species along with data on source, year of planting, and other relevant information. Coupled with this is an E-Map capability that enables the location of specimens to be determined.

Today, at the age of 98, he continues to update and enhance his catalogue and record of the Hackfalls collection. The current catalogue is accessible on the Hackfalls website (www.hackfalls.org.nz).

The Hackfalls collection is indeed very diverse as this approximate list of key genera accessions shows: *Acer* (160), *Alnus* (80), *Betula* (90), *Eucalyptus* (90), *Ilex* (60), *Magnolia* (70), *Malus* (50), *Populus* (220), *Prunus* (80), *Quercus* (450), *Rhododendron* (400), *Salix* (70), and *Sorbus* (70).

His cataloguing efforts were not only confined to the Hackfalls collection because Bob Berry also made a major contribution to Eastwoodhill after the death of William Douglas Cook in 1964. Cook had used engraved lead labels for his trees and maintained diary records of his plantings. In 1967, increasingly concerned at the lack of a proper catalogue of the Eastwoodhill trees, Bob started a voluntary project to map and record the collection. He used Gerd Krüssmann's 1984 *Manual of cultivated broad-leaved trees and shrubs*, a three-volume set written in German. This required ongoing study to understand the language. W.J. Bean's *Trees and shrubs hardy in the British Isles* became the other key reference book.

Bob devoted one day a week at the Eastwoodhill Arboretum detailing the trees there. Where labels were missing (many were removed during World War II by Boy Scouts to be melted down for bullets) he would research Cook's written records. By February 1972 the first ring-binder cyclostyled catalogue was completed. Further updates were made until the publication of *Eastwoodhill Arboretum catalogue of trees, shrubs and climbers* in 1982. Like Hackfalls Arboretum records, Eastwoodhill accessions are now also databased and geo-referenced.

Hackfalls Arboretum is listed as an assessed garden by the RNZIH New Zealand Gardens Trust (www.gardens.org.nz) and has many

significant trees worthy of recording on the New Zealand Tree Register (www.notabletrees.org.nz).

Honours and recognition

Bob Berry's work at Eastwoodhill over that ten year period was a major contribution. But his service on their Trust Board continued over many more years and his knowledge of the collection was invaluable to the work of expert advisory committees of the mid-1980s and 1990s and to further work undertaken by Massey University. It is not surprising therefore that at the Eastwoodhill Centenary Celebrations in 2010 the then Governor General, Sir Anand Satyanand, presented Bob with the Eastwoodhill Centennial Award recognising his outstanding and enduring dedication and service.

Bob Berry was elected an Associate of Honour of the Royal New Zealand Institute of Horticulture in 1991. The New Zealand Arboricultural Association presented him with the Ron Flook Award in 2011 in recognition of outstanding service to the care of trees and the arboriculture industry at large (Cadwallader, 2011). As a Founding Member of the International Oak Society he was presented with their Lifetime Service Award in 2012.

Hackfalls Arboretum was accorded international recognition in 1998 when the International Dendrology Society presented its Plaque. This award is indeed an accolade that recognises the place of Hackfalls among private tree collections around the world.

Hackfalls today: A case for collection conservation

The Hackfalls Charitable Trust is managed by Diane Playle who coordinates operations on both the Arboretum and the farm. The collection is supported by a number of arborist groups who do valuable maintenance work on the collection. Resources and funds to further this work and the considerable clean up of material after such efforts are limited and difficult to access from most of the funding agencies in New Zealand. Funding trusts appear to limit their conservation contributions to projects featuring native flora and fauna. The importance of this collection as a gene pool of trees that could enrich New Zealand landscapes and provide new options for erosion is, regrettably, not appreciated.

It is the writer's view that the Hackfalls Arboretum is of national importance and assistance is urgently required from influential agencies in the country to ensure that resources are made available for its preservation.

In early January 2014 the writer visited then 97 year-old Bob Berry and toured the Arboretum with him. As we went around there was a commentary on each of the important trees along with their stories. With 3000 trees recorded representing some 2700 species, Hackfalls Arboretum is testimony to the legacy of a remarkable man.

Bob Berry celebrated his 98th birthday on the 11th June 2014

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