It is said to be Auckland's most abundant lichen (Hayward & Hayward 1983). The isidia come off readily, forming propagules, which allows it to readily disperse. Bennett and Wright (2004) mention that it grows very rapidly for a lichen (1 cm/year) and that it tolerates high exposure to heavy metals (Zn, Cu, Pb) and sulphur, which it accumulates in the thallus. Presumably this is why it can thrive on such a hostile-looking site as a tar-sealed road. As well as New Zealand (Galloway 1981; 1985), it is abundant in Australia (Elix 1994), and throughout the world.

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Schefflera actinophylla naturalised in Cornwall Park, Auckland

Mike Wilcox

For several years I have been keeping a record of the trees and shrubs found in Cornwall Park. On 13 November 2005 I came across an old olive tree in the Olive Grove which had some epiphytes on it. One of these was Port Jackson fig (*Ficus rubiginosa*), which is fairly commonly seen in the park getting established on pine and macrocarpa trees. Another epiphyte was a cherry of some sort, possibly *Prunus serrulata*. The third epiphyte was a surprise – the umbrella tree or octopus tree, *Schefflera actinophylla* (Endl.) Harms, which is commonly cultivated in Auckland, but as far as I known not previously recorded as growing wild in New Zealand (voucher: AK 294698).

In August this year I saw this tree commonly in northern Queensland. It grows around the fringes of rain forest and *Melaleuca* swamp forests at Cairns and Port Douglas, sometimes as an epiphyte. Seed of *Schefflera actinophylla* is known to be dispersed by birds, and may germinate epiphytically, as has the example Cornwall Park.

Thomas Ball, botanist (1809-1897)

Rebecca Stanley

If you spend time at the Auckland Museum Herbarium (AK) it won't be long before the name "Ball" comes up on the database or on the herbarium sheets. I have often wondered who "Ball" was, and when I casually enquired at the herbarium, discovered that his identity was unknown. "Ball" is listed as the collector for 505 plant specimens in the Auckland Herbarium, including some specimens of (now) threatened plants.

An internet search (for anyone named "Ball" who lived in New Zealand around the times "Ball" collected i.e. 1884-1896) revealed a NZ Dictionary of Biography entry for a "Thomas Ball 1809 – 1897 Coloniser, landowner, politician" (McKenna, 2003). This man had lived in Mangonui from 1859 until he moved to Auckland in 1880. This matched the collection dates and locations of our unknown "Ball" which start in Auckland in 1884, with a few specimens collected at Mangonui in 1887-8, as well as numerous trips around the North and South Islands.

Who was Thomas Ball?

Thomas Ball was from Lincolnshire in England (born 28 February 1809) and had trained as a chemist. At age 50, eleven years after his wife and three children had died, he arranged for a group of around 80 people to immigrate to New Zealand with him and his 3 remaining children. They arrived in Wellington June 1859 on the ship Matoaka, and traveled on to Auckland, then finally Mangonui to take up their land

grants in the nearby Oruaiti Valley (Bolt 1989). Although he was never ordained Thomas Ball was often referred to as 'Reverend Ball' reflecting his religious devotion and work for both the Congregational church and the Methodist church (Bolt 1989). He was also referred to as Dr Ball, possibly because of his training as a chemist and scientific interests. Thomas was a natural leader becoming an Auckland provincial councilor (1861 to 1872), and a member of the House of Representatives (1866 to 1870). In 1880, when he was 71 years old, Thomas Ball moved to Onehunga (Mt Roskill Rd) Auckland, where he was a justice of the peace.

Thomas Ball was quite a wealthy man by the time he got to Auckland. He owned land in Auckland (McKenna 2003) and held shares in several ships. He was one of "nineteen prominent businessmen" who formed the Northern Steam Ship Company in 1881, becoming one of its directors. This is perhaps what enabled him financially to travel throughout NZ in his retirement collecting plants (see Appendix 1). He died on Christmas Day 1897 when he was 88 and is buried at the Purewa Cemetery in Meadowbank (Auckland).

WT Ball

William Thomas Ball was the name of Thomas Ball's son. William would have been 24 years old when he immigrated to New Zealand with his father and sisters. There is a specimen collected by a "WT Ball" of the sedge *Cyperus brevifolius* (then *Kyllinga monocephala*) in the herbarium of the Te Papa Museum (WELT) and at the Auckland Museum Herbarium (AK). There is also a letter at WELT addressed to Thomas Kirk from (what appears to be) a "WT Ball", and an annotation to a WELT specimen which has the collector clearly written as "WT Ball". In one paper Cheeseman (1879) recalls various trips to the far north (regarding *Cyperus brevifolius*) "It was originally discovered by Mr. WT Ball…". However, the *Cyperus* specimens are also referred to in an article (Cheeseman 1878) which starts "Mr Thos. Ball, of Mongonui (sic), has kindly forwarded to me for identification some specimens of the sedge…". Probably both men were involved in this plant record as they both lived in Mangonui at that time.

There are also specimens at AK collected by " WT Ball" of *Utricularia novae-zelandiae* (= *U. dichotoma*) from Taupaki in 1885. These were sent directly to Cheeseman, and are quite separate from the rest of the Ball sheets with their Ball stamps in the ex AKU herbarium. There are four additional specimens collected by "Ball" (I think referring to Thomas Ball) in this location at the same date. Possibly father and son travelled together to Taupaki. Certainly Thomas Ball returned "home" to Mangonui and collected in 1887-88 (see Appendix 1). I believe William did collect occasional botanical specimens, and possibly did so on behalf of his father. His father must have been the primary plant enthusiast/collector as most collecting starts once Thomas Ball moved to Auckland and stops the year prior to Thomas Ball's death.

Thomas Ball the amateur botanist

Thomas Ball started collecting plants for his private herbarium when he was 75 years old, 4 years after he moved to Onehunga. I wondered what seemed to have suddenly interested him in plants? It was then exciting to discover he was a provincial councilor with Thomas Cheeseman (then the curator of the Auckland Museum) one of New Zealand's foremost botanists, and indeed, the records of the Auckland Provincial council list many select committees the two men were on together for several years. There are also several letters (held by the Auckland Museum library) between Cheeseman and Thomas Ball, mostly discussing requests and receipt of papers Cheeseman sent Ball. One letter from Ball to Cheeseman states "I am sectioning a house in the vicinity of Auckland in which case I hope to avail myself of the benefit of the Museum" (Ball, 1881). Possibly it was this contact with a professional botanist that fostered Ball's interest in collecting and learning more about plants. There is an interesting hiatus in his collecting for 5 years (1891-1895) which I cannot explain.

The Ball herbarium

Thomas Ball's herbarium was originally lodged at the University of Auckland herbarium (AKU). In September 2002 the entire AKU herbarium, including Ball's collection, was formally donated to the Auckland Museum (AK) which is where it now resides. Unfortunately there are no records how the private Ball herbarium came to be lodged at AKU. It was probably donated to Professor APW Thomas at the (then) Auckland University College (which opened in 1883 the year before Ball started collecting) after Ball died (Ewen Cameron *pers. comm.*). Thomas himself collected just over 400 specimens for the AKU herbarium from 1898-1904, and its possible that Thomas acquired the Ball herbarium after Ball's death to augment the fledgling AKU herbarium, perhaps with the assistance of Cheeseman. The combination of the Ball & Thomas collections gave AKU an excellent vascular plant herbarium of New Zealand native plants for teaching very early in the twentieth century.

The Ball herbarium sheets were originally larger than the standard size they are today but were cut down in size at AKU between the 1870's and 1980's (Ewen Cameron *pers. comm.*) so that they would fit in the herbarium folders. All the sheets had 'BALL HERBARIUM' in large lettering stamped across the top (See Fig. 1). A few of these stamps survive in the modern cut down sheets.

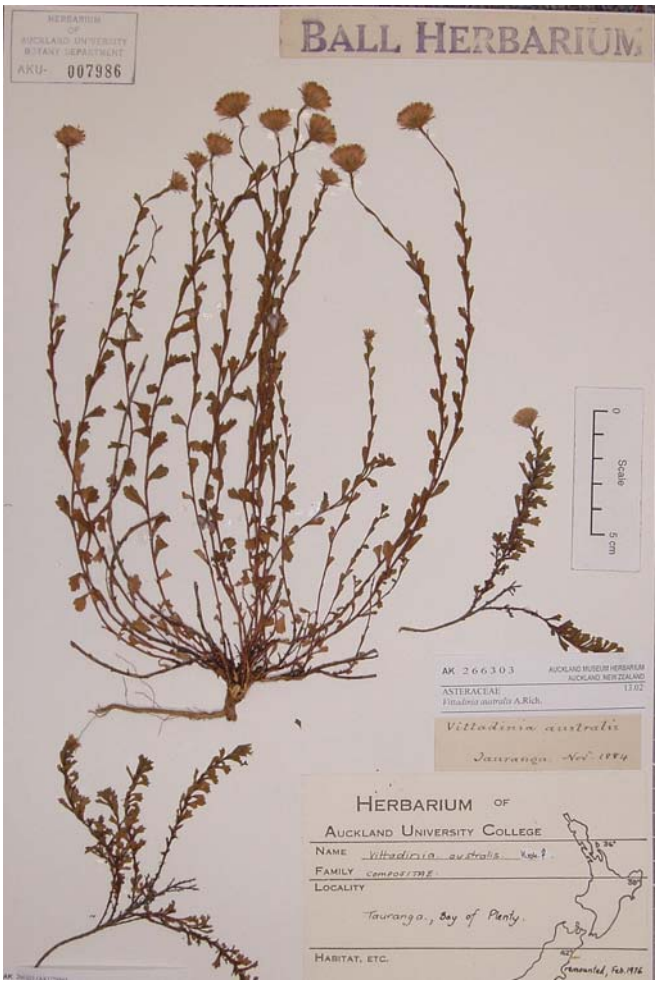

Fig. 1. A cut-down Ball herbarium sheet (AK 266303). The small label "*Vittadinia australis* Tauranga Nov 1884" is presumed to be in Ball's hand; the Auckland University College label is below that (AKU 7986); and the AK computer generated slip is at the top right (AK 266303). Note this is a cut-down sheet, but the typical large "BALL HERBARIUM " stamp which was present on all the Ball specimens is retained in this case.

Thomas Ball's plant collecting

Thomas Ball collected vascular plants, mainly dicots (75%) and mainly natives; only 3% are adventive species (see Table 1). It would appear he was trying to collect one of each native vascular species, as most species are represented by a single sheet. His collections record many threatened plants which have been very useful in reconstructing the locations where these plants once grew as many are now no longer found in the places he collected them e.g. *Tetragonia tetragonioides* at Kohimarama; *Daucus glochidiatus*, *Ileostylus micranthus*, and *Tupeia antarctica* from Rewiti near Woodhill; *Centipeda minima* at Mt Roskill Rd; *Senecio scaberulus* at Titirangi; and *Myosotis forsteri* at Waitakere.

His collection locations were mainly those close to home, i.e. the Auckland Isthmus and Waitakere (places he could get to easily using the train e.g. Rewiti, or on foot) but he also visited the islands of Kawau, Rakino, and Motuihe. Ball also collected plants when he travelled with specimens from both North and South Island locations (see Appendix 1).

The Auckland Museum also holds Ball's collection of fossils (collected by Ball's nephew Mr. J. Bale) from his home town of Brigg in Lincolnshire, over seventy specimens of shells from all over the world and his collection of Roman, British and European coins.

Thomas Ball, though a late comer to botany, certainly made his mark by recording the early Auckland Flora of Auckland. An interesting botanical twist to this story is the ending of his NZ Dictionary of Biography entry, which states, "the only mistake this remarkable man seems to have made was to bring carefully nurtured gorse plants to the Oruaiti Valley" (McKenna 2003).

Acknowledgements

Ewen Cameron gave me details about the Ball herbarium sheets, photographed the herbarium sheet reproduced here, produced Table 1., and offered extremely helpful comments to early drafts. Mei Nee Lee provided me with all Ball's herbarium collection data and coped with numerous requests regarding first name initials! Also thanks to Kim Patrick at Purewa Creek cemetery (where Thomas and William are buried), Sandra Jones for checking the University register for any references to the Ball collections, Elizabeth Millar for her recollections of the Ball herbarium at AKU, Steve McCraith for searching the museum databases, and the Auckland Museum and DOC librarians. Patrick Brownsey at WELT provided me with photocopies of specimens of *Cyperus brevifolia* and a copy of a letter from WT Ball to Thomas Kirk.

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Appendix 1. Thomas Ball's collecting locations by year

Year	Auckland	Outside Auckland
1884	Woodhill, Titirangi, Manurewa	Tauranga, Lake Tarawera, Ohinemutu
1885	Kingsland, Manukau, Waitakere, Kohimarama, Waikumete, Rakino Island, Titirangi, Nihotupu, Mt Roskill. Woodhill, North shore, Mt	Oruru (Maungataniwha, Northland)

	Wellington, Henderson, Mt Eden, Swanson, St John's Lake, Taupaki, Onehunga, Northcote, Muriwai, Rewiti	
1886	Waimauku, Rewiti, Henderson, Waikumete, New Lynn, Woodhill, Manukau Heads, Taupaki, Mt Roskill, Manukau, Titirangi, Great Barrier Island, Mt Wellington, Motuihe Island, Onehunga	Mt Cook, Sealey Range, Whangarei
1887	Woodhill, Titirangi, Nihotupu, Henderson, Waikumete, Bombay, Waitakere, Kawau island	Te Aroha, Taranaki, Mt Egmont, Pongakawa (Otanewainuku Ecological District)
1888	Northshore, Woodhill	Mangonui, Te Aroha, Whangarei
1889	Waikumete	Te Aroha, Hanmer, Otira Gorge, Arthurs Pass, Bealey, Castle Hill, Sumner, Lyttleton, Dunedin
1890	No local collections	Arthurs Pass
1891-1895	No collections	
1896	Nihotupu, Rewiti	Hanmer, Timaru, Castle Hill, Mt Cook

Table 1. Summary of Ball's collecting in the different plant groups.

Plant group	Natives	Exotics	Totals
Ferns & fern allies	86	-	**86**
Conifers	9	-	**9**
Dicots	381	7	**388**
Monocots	14	8	**22**
Totals	**490**	**15**	**505**

Book review: Ocean Shores to Desert Dunes: the native vegetation of New South Wales and the ACT

Reviewed by Rhys Gardner

Except for our geologists' efforts (which only another Glacial could impede) mapping of the NZ landscape now seems to be just a business, trendy manipulations of imagery to benefit creatures like Kyoto and the dairy giants. I suppose a lot of this goes on in Australia too, but they have been luckier, firstly in having intact traditions in public service science and conservation, and secondly, in that dealing with the country's great size and diversity has required dedicated mapping of the fundamentals.

We see this in their Native Vegetation Mapping Program, which aims to cover all 0.8 million square kilometers of southeastern Australia at a scale of 1: 200 000. Officially begun in 1998, it builds on work dating back to the 1920s[1] and is being continued through fieldwork aided of course by modern technology (perhaps mainly through aerial photography rather than satellite data). In this splendid book David Keith of NSW's Dept of Science and Conservation presents a two-map synthesis of the very considerable achievements of the program to date.

Its Introduction discusses the ecology and post-human history of southeastern Australia's vegetation and the principles of vegetation classification and mapping. The 12 formations recognized for the region (NSW, ACT and Lord Howe Island) are then keyed out. Formations are the broadest units, diagnosed mainly by structure and appearance but sometimes also by their main stresses - drought, fire, frost and flood. Thus there are rainforests, sclerophyll forests (wet or dry), grassy woodlands, and so on to arid shrublands and "the alpine complex". Formation names, like those of plant families, are plural, because each typically

[1] Among previous examples of vegetation mapping in NSW the work of expatriate New Zealander C.W.E. (Ted) Moore gets plaudits – see Australian J. Bot. 1: 485-547, 1953.