Dicot lianas and related trailing plants (7 + 2)		
Calystegia sepium subsp. *roseata*	lc	lc
Elaeagnus ×reflexa *	s	o, V
Metrosideros fulgens		s
Metrosideros perforata	o	o
Muehlenbeckia australis	l	o
Parsonsia ?heterophylla	o	o
Passiflora tetrandra	o	c
Rubus australis	s	s
Rubus fruticosus agg. *		lc

Dicot herbs (5 + 11)		
Acaena anserinifolia/novae-zelandiae	l	o
Centella uniflora	l	l
Dichondra repens		l
Galium aparine *		l
Galium palustre *		lc
Hypocharis radicata *		l
Lotus pedunculatus *	lc	o
Myosotis sylvaticata *		s
Persicaria debilis	l	A
Phytolacca octandra *		s
Plantago lanceolata *		s
Ranunculus repens *		la
Senecio bipinnatisectus *		s
Solanum nigrum *	s	
Solanum nodiflorum		l
Sonchus oleraceus *		l

Tree-like monocots (2 + 0)		
Cordyline australis	o	o & P
Rhopalostyis sapida	a	a

Monocot liana (1 + 0)		
Ripogonum scandens	c	l

Monocot herbs (22 + 6)		
Astelia hastata	c	o
Carex dissita	o	lc
Carex lambertiana	o	
Carex maorica	l	l, V
Carex secta	s	
Carex solandri	o	
Carex virgata	l	l
Cenchrus clandestinus *		l
Cyperus ustulatus	l	l
Dactylis glomerata *		lc
Eleocharis acuta	l	l
Gahnia lacera	o	o
Gahnia xanthocarpa	l	l
Hedychium gardnerianum *	o	o
Isachne globosa	l	la
Isolepis reticularis	l	
Juncus edgariae		l
Juncus effusus *	l	l
Machaerina articulata	lc	lc
Machaerina rubiginosa	x	l
Machaerina tenax	l, V	s
Microlaena stipoides	o	o
Oplismenus hirtellus	c	o-la
Paspalum urvillei *		l
Phormium tenax		l? & P
Schoenus maschalinus	lc	l
Typha orientalis		A
Zantedeschia aethiopica *		l

Arthropteris tenella hangs in there for 97 years on Maungakiekie (One Tree Hill) in Auckland City

Anthony E. Wright

As a schoolboy, my botanical explorations centred on ferns, with Greta Stevenson's little *A book of ferns* (Stevenson 1954) borrowed rather long term from my school library as my guide. Boy Scout tramps in the Coromandel Ranges, bike rides out to the Waitakeres, and summer holidays in Orewa next to Eaves Bush Reserve (with hitched rides to Waiwera Hill and Wenderholm reserves) provided access to a fair variety of forest fern habitats. But the bread and butter of my fern explorations were the volcanic cones of Auckland City, and in particular Maungakiekie (One Tree Hill Domain and Cornwall Park). Literally a block away from where we lived in my teens, it was easily available after

school or on the weekends. Over many years, my brothers and I got to know pretty well every nook and cranny.

Having made contact with the Auckland Museum Herbarium one day after school (Wright 2013), and my guidebook having been significantly upgraded to a copy of Crookes and Dobbie (1963) thanks to Mrs Phyllis Hynes and Miss Jeanne Goulding, my list-making was augmented by collecting voucher specimens. Mrs Hynes and Miss Goulding had taught me that lists were no proof of existence of a plant in time or space: a well collected, pressed and labelled voucher specimen lodged in a public herbarium would, however, stand the test of time.

So I began collecting vouchers, and between 1970 and 1972 collected specimens of 23 species of wild native ferns from Maungakiekie. Field pressing was between the lovely thick newsprint pages of *Boy's Own* and other annuals given as Christmas and birthday presents by my grandparents some years earlier.

When I moved on to the University of Auckland I joined the Auckland University Field Club. I offered a short paper on the ferns of One Tree Hill to the Editor of the Club's scientific journal *Tane*. He laughed and said I needed to think bigger: no one would publish a note on only the ferns of a locality – I would need at least to cover the whole vascular plant flora – native and adventive. So that manuscript was discarded.

This year, I decided to try again. The enlightened approach of this Journal's Editorial Team meant there was a publication venue available. So I commenced some field work on Maungakiekie to see if I could relocate some of the 1970s records. To assist this, and check whether any further voucher specimens were necessary, Ewen Cameron kindly provided me with a list of all the fern specimens from Maungakiekie/One Tree Hill in the Herbarium of the Auckland War Memorial Museum (AK). The 53 sheets listed were all my collections, bar two collected by H.B. Matthews (Smith 2016, p.135) just after the First World War. One of these was, for me, a very exciting record – an insight into the original lava field forest flora of the Auckland isthmus – *Arthropteris tenella*.

The database listing for AK 136482 (Fig. 1) gave the locality as "New Zealand, North Island, Auckland, One Tree Hill, scoria boulders"; the collector "H B Matthews" and the date of collection "05 June 1919". I went straight to the actual specimen and was rewarded firstly by three sterile fronds of this handsome fern, and secondly by Matthews' original label in pencil on a torn scrap of paper. This label (Fig. 2) reads "*Polypodium tenellum* / Col HBM Jun 5th 1919 / One Tree Hill Auckland / Scoria boulders S.W."

These 'rewards' were significant. A combination of the sterile fronds (suggesting a terrestrial rather than epiphytic occurrence) and the letters S.W. gave me critical clues as to where the collection locality might have been. In my mind's eye, there was only one place that would fit the bill.

Next morning, acting on this hunch, I headed for One Tree Hill and parked outside the Sorrento functions centre. Crossing the road and ascending a little I headed for a couple of dozen large basalt boulders standing in the rough pasture on the slope below an old hawthorn (*Crataegus monogyna*) (Fig. 3). At the base of the third boulder I looked at I let out a Whoopee! There was *Arthropteris tenella*, 97 years after Blen Matthews had collected it, and almost certainly the same locality, in the "S.W." part of One Tree Hill.

The fern was locally reasonably common around this and another five adjacent boulders over a total ground expanse of 1.5 x 1 m. Visibly distinct patches of fern fronds (all sterile, and the patches probably connected by rhizomes) were growing out of the sward and along rock crevices and between the rocks. Recording from upper left (west) to lower right (east) these patches had surface areas (all cm) of approximately 30 x 35 (Fig. 4), 10 x 10, 45 x 10, 20 x 30, 10 x 40, 15 x 15, 40 x 10, 30 x 15 and 15 x 5. A few vigorous new rhizomes were emerging from the shelter of the surrounding sward and climbing the more exposed boulder faces. The surrounding sward comprised meadow rice grass (*Microlaena stipoides*), danthonia (*Rytidosperma racemosum*), cocksfoot (*Dactylis glomerata*), browntop (*Agrostis capillaris*), ryegrass (*Lolium perenne*), bidibid (*Acaena anserinifolia*), *Geranium gardneri* and narrow-leaved plantain (*Plantago lanceolata*). The thalloid liverwort *Reboulia hemisphaerica* subsp. *australis* formed pure colonies on vertical soil faces and the lichens *Pseudocyphellaria crocata*, *Stereocaulon ramulosum, Cladia aggregata, Parmotrema* sp., *Xanthoparmelia* sp. and *Heterodermia* sp. were abundant on the basalt boulders themselves. A voucher specimen (AK 361170) was collected.

Although the rough pasture appeared ungrazed at the time of my visit, a large flock of sheep was nearby. This flock roams from below the Sorrento, through the *Arthropteris* site and up to the summit of One Tree Hill. In the 1970s and 1980s cattle grazed these medium to steep areas; the erosion they

Fig. 1. H.B. Matthews' 1919 specimen of *Arthropteris tenella* from One Tree Hill (AK 136482).

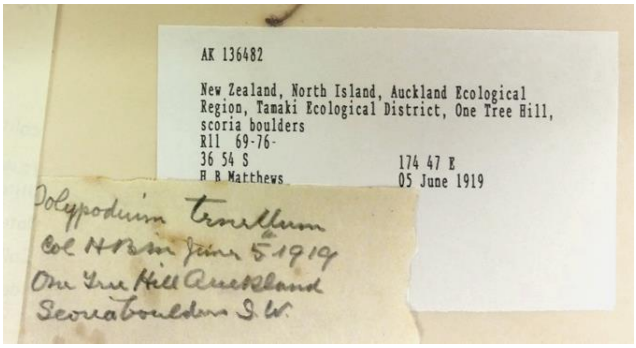

Fig. 2. H.B. Matthews' original hand-written label on AK 136482.

exacerbated has seen their replacement by sheep. There is little doubt that the *Arthropteris* itself is grazed during drier times when there is less pasture growth. The fact that only new, light green fronds grew exposed, and that older, dark green fronds only occurred in crevices out of grazers' reach supports this.

Consider this a trailer for the full fern flora of Maungakiekie, coming to a Journal near you soon.

Fig. 3. *Arthropteris tenella* collection site in basalt boulder field. Photo: A.E. Wright, 2 April 2016.

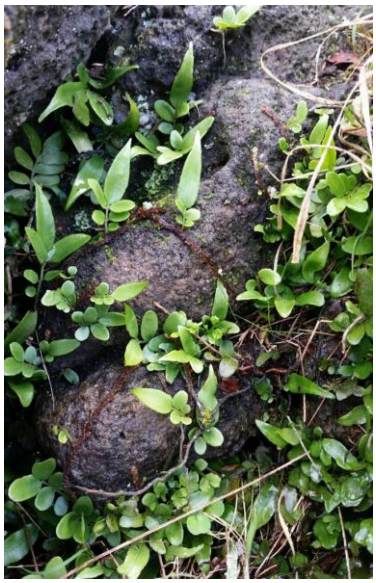

Fig. 4. Largest area of *A. tenella* on basalt boulder face. Photo: A.E. Wright, 2 April 2016.

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Oleander (*Nerium oleander*, Apocynaceae) seeding down

Rhys Gardner

Introduction

The oleander, an ornamental shrub so commonly cultivated in warmer parts of the world, is believed to have a very wide native range too, from Portugal and North Africa east to southern China. Its natural habitat, though, seems to be more restricted: the plant is often described as growing in seasonally dry, rocky river-beds, that is, as a rheophyte. It is said to be "not at all particular about soil, tolerating poor drainage or ... high salt content" (Brenzel 1995). It grows so well in New Zealand that one might suppose that it could naturalise along our rivers too. The *Flora of New Zealand* account (Webb et al. 1988: 141) is rather vague on the oleander's biology here, saying just that the plant is "an occasional escape from cultivation in the vicinity of