

scandens) and Mexican daisy (*Erigeron karvinskianus*). At this stage they seem mostly confined to the track edges, but their potential to spread in a relatively open piece of coastal forest is considerable and should be a priority for any weed control work.

Destruction Gully

Lisa Clapperton

In the afternoon we drove along the Whatipu Road to the Destruction Gully layby, where the well-graded track made its way gently out towards the coast. Some nice specimens of *Brachyglottis kirkii* var. *angustifolia* were seen at the start of the track, along with *Alseuosmia macrophylla*. Their good health was possibly an indication of pest control work carried out in the area. At first we walked through forest containing a wide range of species typically found in poor gumland soils. The canopy was dominated by kanuka (*Kunzea ericoides*) and mamangi (*Coprosma arborea*), with a range of species including kauri (*Agathis australis*), Hall's totara (*Podocarpus cunninghamii*), rimu (*Dacrydium cupressinum*), taraire (*Beilschmiedia tarairi*), hinau (*Elaeocarpus dentatus*), big-leaved mahoe (*Melicytus macrophylla*), toru (*Toronia toru*), mairehau (*Leionema nudum*) and *Dracophyllum sinclairii*. *Gahnia xanthocarpa* was common, and there were a few patches of the gumland fern, *Lindsaea linearis*, and snowberry (*Gaultheria antipoda*).

From the lookout we could see down Destruction Gully with a clear view over the canopy across the mouth of the Manukau Harbour to the steep sand cliffs of the southern head of the harbour (the Awhitu Peninsula), and with Paratutae guarding the northern entrance at Whatipu (Fig. 6). Groves of kauri rickers could be clearly seen emerging above the kanuka canopy, with swathes of nikau (*Rhopalostylis sapida*). The continuous cover of bush shows the excellent recovery the area has made from the days of logging and bush clearance.

At the lookout grew three or so *Pittosporum ellipticum* with their furry seed pods. As the ridge we



Fig. 6. View from lookout, down Destruction Gully to Makaka Bay. Paratutae Island beyond. Photo: JS, 18 Feb 2012.

were following became more defined, *Corokia buddleoides*, *C. cotoneaster*, *Libertia grandiflora*, *Dianella nigra*, *Carmichaelia australis*, *Hebe macrocarpa*, *Sophora fulvida* and *Helichrysum lanceolatum* were in evidence. A shrub of *Pittosporum cornifolium* was spotted growing on a branch of a tree.

The track steepened considerably as it dropped down to the sea at Makaka Bay, through the sweet smell of fermenting karaka (*Corynocarpus laevigatus*) fruit. Debris washed along the track was evidence of a recent heavy rain storm. Pohutukawa (*Metrosideros excelsa*) grew along the coast, and there were some thickets of whau (*Entelea arborescens*). Unfortunately a number of weeds have taken advantage of the open disturbed area around the track just above the small cove, with African club-moss (*Selaginella kraussiana*), Mexican devil (*Ageratina adenophora*), Mexican daisy (*Erigeron karvinskianus*) and pampas (*Cortaderia jubata*) being the principal ones. A navigational marker is located just above the cove and evidence of an old wharf was seen in the cove; this lower section of the track has been heavily impacted over many years.

A botanical tour of Tasmania, 18-30 March 2012

Mike Wilcox (editor)

Introduction

Mike Wilcox

Continuing our series of overseas tours – New Caledonia (2003), Sydney (2009) and Norfolk Island (2010) – Auckland Bot Soc visited Tasmania, 18-30 March 2012. Our objective was to see a wide range

of habitats and plant species and to investigate the similarities and differences between the Tasmanian and New Zealand floras. March was chosen as it is usually the month with the most settled and comfortable weather, though mid-October is probably the best time to see wildflowers. Tasmania has a



Fig. 1. Group photo, outside museum at Deloraine. Photo: Mike Wilcox's camera, 29 March 2012.

latitudinal range of 40° to 43° S, with a four-season climate as in New Zealand. Annual rainfall ranges from 600 mm in the east to 2000 mm in the west.

The first European to discover Tasmania was Abel Tasman in 1642, and it was colonised by England in 1803, initially as a penal settlement. In between, several visits were made by French explorers (Marion du Fresne in 1772; Bruni D'Entrecasteaux with the *Recherche* and Huon de Kermadec commanding the *Espérance* in 1792; Nicholas Baudin in 1802). Jacques-Julien Houtou de Labillardière was the botanist on the *Recherche*, while Claud Riche was his counterpart on the *Espérance*. Many plants and places in Tasmania owe their names to these French visits. Captain James Cook's second (Tobias Furneaux, *Adventure*, 1773) and third (*Resolution* and *Discovery* 1777) voyages also visited Tasmania. The history of botanical discovery in Tasmania is well covered by Potts et al. (2006), while Moore (2000) discusses the very important botanical work of Robert Brown during his stay in 1804.

Literature on Tasmanian flora and vegetation

We consulted several books, articles, and websites to help us identify and learn about the plants: *general checklists* (Buchanan 2005; Baker & Duretto 2011); *floras* (Curtis 1963, 1967, 1979; Curtis & Morris 1975, 1994; Garrett 1996); *general field guides* (Collier 1995; Collier & Howells 2007; Cameron et al. 2000; Kirkpatrick 1997; Simmons et al. 2008; Wiltshire & Jordan 2009); *local field guides* (Collier 1988; Burns 2001); *vegetation* (Harris & Kirkpatrick 1991; Kirkpatrick & Balmer 1991; Marsden-Smedley et al, 1999; Kirkpatrick 2004; Daley & Kirkpatrick 2004). A fascinating book by Wapstra et al. (2011) particularly deals with names of the plants and their meaning and pronunciation. We were impressed by the flip charts for eucalypts (Wiltshire & Potts 2007) and other trees (Wiltshire & Jordan 2009), and on our return made use of the Tasmanian Online Flora (Herbarium) and

the Keys to Tasmanian vascular plants (University of Tasmania).

Participants

Our group (Fig. 1) was *Colleen Brewer, Warren Brewer, Jan Butcher, Linda Conning, Bev Davidson, Geoff Davidson, Mark Fort, Anne Fraser, Leslie Haines, Shelley Heiss-Dunlop, Peter Hutton, Eila Lawton, Peter Maddison, Christine Major, Gretta McLeay, John Millett, Helen Preston Jones, Juliet Richmond, Joshua Salter, Doug Sheppard, Julia Stace Brooke-White, Claire Stevens, Val Tomlinson, Diana Whimp, Alison Wesley, Mike Wilcox (leader), Nancy Wilcox, Maureen Young.*

Photographs by Julia Brooke-White (JB-W); Bev Davidson (BD); Shelley Heiss-Dunlop (SH-D); Christine Major (CM); John Millet (JM); Joshua Salter (JS); Claire Stevens (CS); Mike Wilcox (MW).

Itinerary

The tour started in Hobart and ended in Launceston (Fig. 2). Transport was in three minibuses (Fig. 3).

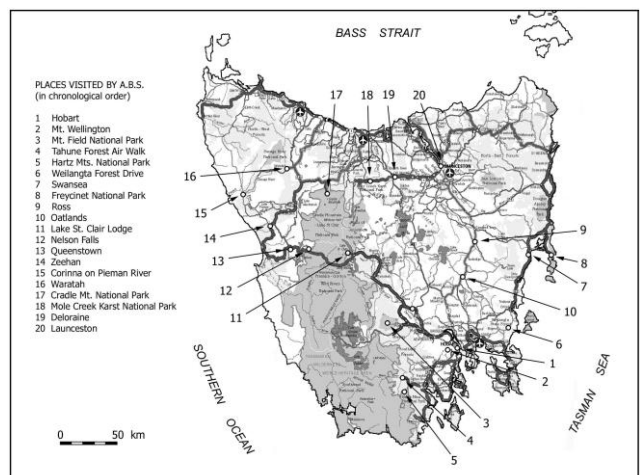


Fig. 2. Places visited by ABS, 18-30 March 2012 (Tourism Tasmania map, modified by Joshua Salter).



Fig. 3. Our three minibuses, Weilangta Forest Drive. Photo: MW, 22 March 2012.

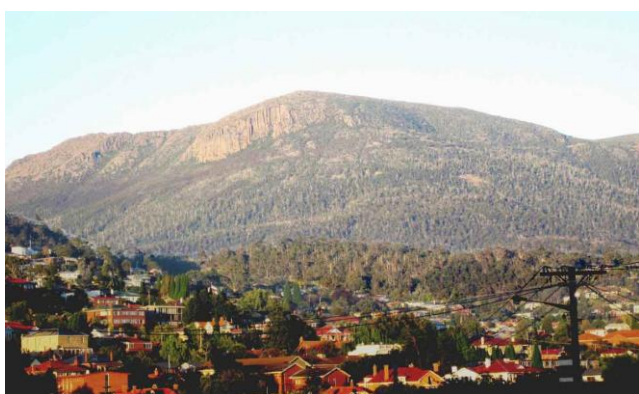


Fig. 4. Mt Wellington from Hobart. Photo: MW, 19 March 2012.

18 March: Arrival in Hobart. Accommodation at Adelphi Court YHA, North Hobart.

19 March: Mt Wellington – Fern Tree (Pipeline Track: Fern Tree Bower and Silver Falls), The Pinnacles (summit), and The Springs.

20 March: Mt Field National Park– Pandani Grove and Lake Dobson, Tall Trees walk.

21 March: Huon Valley – Geeveston Forest & Heritage Centre, Tahune Forest AirWalk, Hartz Mountains National Park.

22 March: Hobart – The Tasmanian Herbarium, Museum of Old & New Art, Royal Tasmanian Botanical Gardens; Weilangta Forest Drive. Accommodation at Swansea Backpackers.

23 March: Freycinet National Park – Wineglass Bay. Night visit to mutton bird colony.

24 March: Travel via Midlands (Campbell Town, Ross, Oatlands, Bothwell) to Lake St Clair. Accommodation at Lake St Clair Lodge (Drumlin bunk-house and cabins).

25 March: Cradle Mountain-Lake St Clair National Park – Cynthia Bay to Shadow Lake.

26 March: Travel to Corinna on Pieman River via Nelson Falls, Queenstown and Zeehan. Accommodation at Corinna Wilderness Experience.

27 March: Corinna – Whyte River walk, Huon Pine walk, Pieman River cruise on Arcadia II. Travel via

Waratah to Cradle Mountain. Accommodation at Cradle Mountain Discovery Holiday Park.

28 March: Cradle Mountain National Park – Dove Lake circuit and Marion’s Lookout. Night tour to see marsupials.

29 March: Travel to Launceston via upper Wilmot and Mersey Rivers, Mole Creek Karst National Park, Mole Creek and Deloraine. Visited Cataract Gorge on South Esk River in Launceston. Accommodation in Launceston Backpackers.

30 March: Departure.

Places of interest

Mt Wellington

For our first foray into Tasmanian botany we grabbed the opportunity of a fine, calm day to visit Mt Wellington – the famous backdrop to Hobart. Wellington Park covers 18,250 ha, and is managed by the Hobart City Council (Fig. 4). It has abundant and diverse plant life, covering an altitudinal range of 400 m to 1300 m. We started at Fern Tree, with an introductory walk along the Pipeline Track as far as Fern Tree Bower (460 m) and Silver Falls. The wet sclerophyll forest here comprised tall stands of stringybark (*Eucalyptus obliqua*), together with blue gum (*E. globulus*) – Tasmania’s state flower. A rainforest understorey was strongly developed, the main trees being silver wattle (*Acacia dealbata*), myrtle beech (*Nothofagus cunninghamii*) (Fig. 5), sassafras (*Atherosperma moschatum*) and celery-top pine (*Phyllocladus aspleniifolius*). Smaller trees and shrubs included musk (*Olearia argophylla*), forest daisybush (*O. lirata*), blanket leaf (*Bedfordia salicina*), cheesewood (*Pittosporum bicolor*), satinwood (*Nematolepis squamea*), stinkwood (*Zieria arborescens*), Tasmanian laurel (*Anopterus glandulosus*), *Cyathodes glauca*, and *Richea dracophylla*. Man fern (*Dicksonia antarctica*) was much in evidence. We were surprised to find a naturalised plant of New Zealand’s *Coprosma robusta*. A common native *Coprosma* here was *C. quadrifida*.



Fig. 5. Myrtle beech (*Nothofagus cunninghamii*), Fagaceae, Mt Field NP. Photo: MW, 19 March 2012.



Fig. 6. Some of our group on Mt Wellington. Photo: MW, 19 March 2012.



Fig. 7. Snow peppermint (*Eucalyptus coccifera*), Myrtaceae, Mt Wellington (Hobart in distance). Photo: MW, 19 March 2012.

The drive to the Pinnacles (summit, 1270 m) took us up through an altitudinal sequence of eucalypts: *Eucalyptus obliqua*, *E. delegatensis*, *E. johnstonii*, *E. urnigera*, and at the highest levels, *E. coccifera*. The alpine plants growing amongst dolerite outcrops and boulders occupied our attention for some time (Fig. 6). *Scoparia* (*Richea scoparia*) was the first eye-catcher, with its sprawling habit and crowded leaves. Next we were on to mountain rocket (*Bellenden montana*), attracted by its hanging bunches of red fruit capsules, and other members of the Proteaceae, yellow bush (*Orites acicularis*) and *Orites revolutus*. *Bellenden montana* is an unusual member of the Proteaceae in several respects. It has the fewest chromosomes ($n=5$) of any genus, and it constitutes a monotypic subfamily Bellendenoideae, considered to be basal in the Proteaceae (Wiltshire & Stace 1997).

Eucalyptus coccifera (Fig. 7) reaches to just below the summit where it here takes the distinctive form of low, glaucous, prostrate bushes, growing with *Pimelea sericea* (Plate 1A). *Melicytus angustifolius* (reminiscent of New Zealand *M. alpinus*) was an interesting discovery, growing flattened on a vertical rock face (Fig. 8), while waratah (*Telopea truncata*), mountain pepper (*Tasmannia lanceolatum*), creeping tea tree (*Leptospermum rupestre*), *Epacris serpyllifolia*, *Planocarpa petiolaris*, *Ozothamnus ledifolius*, and *Exocarpus humifusus* were all much admired. Monocots of note were *Carpha alpina*, *Astelia alpina*, *Baloskion australe* and *Poa gunnii*. We saw no cushion plant vegetation, nor any conifers.

Half way down the mountain, at The Springs (720 m), we took a short walk along the Lenah Valley Track through dense regrowth eucalypt forest that had sprung up after a big fire in 1967. Here was abundant *Eucalyptus delegatensis* and *E. johnstonii*, with black wattle (*Acacia mearnsii*), silver wattle, woolly tea tree (*Leptospermum lanigerum*) and satinwood in abundance. Cutting grass (*Gahnia*

grandis) was very common here, and we were subsequently to see a lot of it on our travels. Other plants we recorded were *Aristotelia peduncularis*, *Correa lawrenciana*, *Hakea lissosperma* and *Cyathodes glauca*.

Robert Brown (botanist on Matthew Flinders' *Investigator* expedition) visited Mt Wellington several times in 1804, recording and collecting plants (Moore 2000; Potts et al. 2006). He got and named here the type specimen of *Bellenden montana* R.Br. *Brachyglottis brunonis*, more or less endemic to Mt Wellington, commemorates him – we glimpsed this yellow-flowering bush as our convoy descended the winding road.



Fig. 8. *Melicytus angustifolius*, Violaceae, Mt Wellington. Photo: MW, 19 March 2012.

Mt Field National Park

Eila Lawton and Peter Maddison

A quick coffee and book-buying spree at the Mt Field National Park office while our leader purchased our park passes for the whole trip, and then the minibuses ground their way up to Lake Dobson (1031 m) and the Pandani Grove Nature Walk.

The lake was formed many thousands of years ago by melt water from a glacier on Mt Mawson backing up behind moraine deposits. At this altitude, plants need to be capable of withstanding extremes of temperature. So we were faced with quite an array of small-leaved, often waxy or hairy, plants to distinguish. First was alpine heath myrtle (*Baeckea gunniana*) – this, as many other Tasmanian plants, named after Ronald Campbell Gunn.

Gunn was a first-rate botanist whose contribution was commemorated in Sir Joseph Hooker's introduction to his *Flora Tasmaniae* (1860): "There are few Tasmanian plants that Mr Gunn has not seen alive, noted their habits in a living state, and collected large suites of specimens with singular tact and judgment. These have all been transmitted to England, accompanied with notes that display remarkable powers of observation, and a facility for seizing important characters in the physiognomy of plants, such as few experienced botanists possess." Incidentally in 1864, Gunn was a Commissioner for selecting the seat of the Government in New Zealand, i.e. Wellington.

There was also copperleaf snowberry *Gaultheria hispida* (Plate 1B), alpine cheeseberry (*Planocarpa petiolaris*), *Trochocarpa cunninghamii*, and woolly teatree (*Leptospermum lanigerum*) – one of several Tasmanian *Leptospermum* sp. including our own manuka (*L. scoparium*). And then amongst the Proteaceae, *Orites*, specifically *O. acicularis*, *O. revoluta* and *O. diversifolia* provided a challenge. Pink berries and tiny flowers predominated but the brilliant purple berries of *Billardiera longiflora* stood out at this first sighting of what was to become an easily recognised plant. *Tasmannia lanceolata* was abundant, we identified *Coprosma nitida* in fruit (Plate 1C), and there were rather stunted myrtle beech, and plentiful *Banksia marginata*.

Conifers were on the search list. Pencil pine *Athrotaxis cupressoides* (see 'Conifers' section below), so called because of the tapering shape of the tree, was an easy find around the lake shore, its tiny adpressed leaves allowing it to flourish in exposed places. King Billy pine (*A. selaginoides*) was more elusive. Another conifer plentiful around the lake shore was *Diselma archeri*.

The main eucalypts were snow peppermint (*Eucalyptus coccifera*), with a characteristic hook-tip

to the leaves, and alpine yellow gum (*E. subcrenulata*), with bright green foliage and yellow and reddish-striped smooth bark. But the crowning glory of the first part of the day was definitely the genus of heaths known as *Richea*, including *R. scoparia* and *R. sprengelioides*. Most spectacular, though, was the many metres tall pandani *R. pandanifolia* (Plate 1D), its skirt of dried leaves resembling our *Dicksonia fibrosa* trunks. A lunchtime surprise for Colleen was the wished-for appearance of a platypus on the lake shore – we hope Peter Hutton's grandchildren enjoy their cuddly souvenir.

We made three stops on the way down the mountain, the first unscheduled as keen eyes were attracted to the pendulous red flowers of climbing heath (*Prionotes cerinthoides*) (Plate 1E), and nearby our first King Billy pine, a small one looking like an upright 400 mm *Huperzia*, justifying its specific name, *selaginoides*. Then came a viewing of the tree known in Australia just as horizontal (*Anodopetalum biglandulosum*), that bushman's nightmare, its interlaced horizontal habit forcing the traveller to clamber over it, and "woe betide the luckless wight who drops into the gap made by a rotten branch" (Robert Johnston (1843-1918) Geologist – quote from 1874, on a sign by the track). Here we also encountered sassafras, laurel, celery-top pine, myrtle beech, and large trees of yellow gum (*Eucalyptus johnstonii*).

Finally a walk through the spectacular Tall Trees (Fig. 9), *Eucalyptus regnans* – many over 70 m tall, one of the tallest trees in the world! The understorey was comparatively sparse and tall, comprising mostly silver wattle, blackwood, and very commonly, dogwood (*Pomaderris apetala*), and with plentiful *Dicksonia antarctica*. Then 'home' for a quiet night in Hobart.

Huon Valley – including Geeveston Forest & Heritage Centre, the Tahune Forest AirWalk and Hartz Mountains National Park

Alison Wesley and Mike Wilcox

On this day our three vans headed south of Hobart initially to Kingston, from where the route was more westerly to Huonville, Franklin, Port Huon, and finally Geeveston where we made our first stop, for petrol and secondarily coffee. Our route was adjacent to the Huon River and was within the main area of Tasmania devoted to apple growing. We noted the sign advertising an "Apple museum" but did not stop here.

A pleasant surprise in Geeveston was the Forest and Heritage Centre which offered information on the surrounding attractions as well as providing interpretation of the importance of the forestry industry to the town. It was fascinating to see examples of the timber from the main forestry trees of the area, particularly the Huon pine (*Lagarostrobos*



Plate 1A. *Pimelea sericea*, Thymelaeaceae, Mt Wellington. Photo: CM, 19 March 2012.



Plate 1B. Snow berry (*Gaultheria hispida*), Ericaceae, Lake Dobson, Mt Field NP. Photo: MW, 20 March 2012.



Plate 1C. *Coprosma nitida*, Rubiaceae, Mt Field NP. Photo: MW, 20 March 2012.



Plate 1D. Pandani (*Richea pandanifolia*), Ericaceae, Lake Dobson, Mt Field NP. Photo: MW, 20 March 2012.



Plate 1E. Climbing heath (*Prionotes cerinthoides*), Ericaceae, Mt Field NP. Photo: CM, 20 March 2012.



Plate 1F. Dwarf leatherwood (*Eucryphia milligani*), Eucryphiaceae (= Cunoniaceae), Hartz Mt. NP. Photo: MW, 21 March 2012.



Plate 2A. Sassafras (*Atherosperma moschatum*) and man fern (*Dicksonia antarctica*), Robertson's Bridge, Weilangta Forest Drive. Photo: MW, 22 March 2012.



Plate 2B. Heart berry (*Aristolelia peduncularis*), Elaeocarpaceae, Weilangta Forest. Photo: JS, 22 March 2012.



Plate 2C. Wineglass Bay, from the lookout, Freycinet NP. Photo: SH-D, 23 March 2012.



Plate 2D. *Pentachondra involucrata*, Ericaceae, Freycinet NP. Photo: SH-D, 23 March 2012.



Plate 2E. Autumn teatree (*Leptospermum grandiflorum*), Myrtaceae, Freycinet NP. Photo: JM, 23 March 2012.



Plate 2F. *Epacris impressa*, Ericaceae, Freycinet NP. Photo: SH-D, 23 March 2012.



Fig. 9. L-R: Nancy, Peter, Alison, Maureen, Eila and Leslie with large mountain ash (*Eucalyptus regnans*), Myrtaceae, Tall Trees Walk, Mt Field NP. Photo: MW, 20 March 2012.

franklinii) which is now a protected tree. In the early 1820s ships were constructed from Huon pine. It is one of the world's slowest growing and longest lived trees.

At this time on our trip the rain began in earnest and in view of the deteriorating weather a decision was made that the whole group would visit the Tahune Forest AirWalk. This was located a further 30 km west of Geeveston close to the junction of the Huon and Picton Rivers, and not far from the Hartz Mountain National Park which had been our original plan for the day.

The Tahune AirWalk is a tree-top walk in old-growth forest allowing one to walk closer to the canopy trees of the area and above the subcanopy trees and shrubs (Fig. 10). The principal emergent tree seen on this walk was *Eucalyptus obliqua*, which grows up to 80 m in height. It has the distinction of being the first *Eucalyptus* discovered and published. It was collected in 1777 during Cook's third voyage when the botanist on the *Discovery*, David Nelson, collected the specimen from Bruny Island. It was examined by a French Botanist Charles Louis L'Héritier de Brutelle who used it as the type specimen for a new genus *Eucalyptus* he described in 1788, "eu" meaning ('good, well') and 'calyptos' meaning ('covered') in reference to the flower bud cap. The species name '*obliqua*' described the leaf bases of unequal length.

Glimpses of Huon pine were seen growing close to the Huon River, these trees mostly being rather misshapen due to their location. The trees of the canopy included myrtle beech, silver wattle, blackwood, dogwood and leatherwood (*Eucryphia lucida*). This last tree was finally seen flowering, having been seen on both our previous day's walks. Other previously seen trees included sassafras and celery-top pine.

By midday the weather had become distinctly wet and although the AirWalk (including its cantilevered portion) was a great experience, we were all happy to seek shelter in various park buildings where we were able to eat our lunches. After lunch we explored the short Huon Pine Walk where a number of small Huon pines were seen, the oldest about 450 years. The very wet forest also housed a number of ferns including *Blechnum watsii*, *Blechnum nudum* and also filmy ferns.



Fig. 10. L-R: Linda, Eila, Jan, Anne, Bev, Geoff and Diana on the Tahune Forest AirWalk. Forest of stringybark (*Eucalyptus obliqua*) with rainforest subcanopy. Photo: MW, 21 March 2012.

The managed state forests of the Huon District cover 123,000 ha and have been highlighted in a United Nations publication as an example of excellent forest management (Dargavel 2005) for successfully balancing timber production with conservation. These forests are managed sustainably for wood, with around 420,000 m³ being harvested annually (75% for wood chips, 25% for sawlogs and veneer logs), with clearfelling coupes of 50-100 ha. The eucalypt forests regenerate freely after logging, encouraged by burning to create a seed bed, and supplemented where necessary with air seeding or planting. It is expected to take around 90 years before the next harvest. We drove through these forests (*Eucalyptus obliqua*, *E. regnans*, *E. delegatensis*) on our way to the AirWalk, and to the Hartz Mountains National Park. It was apparent by the numerous explanatory signs, side-walks to points of interest, and the visitor centres, that Forestry Tasmania is very active and open in explaining its operations to the public. The famous Warra Long-Term Ecological Research Site of

15,900 ha established in 1995 adjoins the Tahune Forest and has been the subject of numerous biological studies (Brown et al. 2001), with the vegetation and flora fully described by Corbett & Balmer (2001).

Following a further brief stop at the headquarters we drove to the Hartz Mountain National Park top where we were able to see more alpine plants adjacent to a boardwalk along the track to Lake Esperance which we followed for approximately 45 minutes. Identified plants included *Bauera rubioides*, *Eucryphia milliganii* (Plate 1F), *Eucalyptus coccifera*, *Gahnia grandis*, *Astelia alpina* and *Milligania densiflora* (Fig. 11).



Fig. 11. *Milligania densiflora*, Asteliaceae, Hartz Mt NP. Photo: MW, 21 March 2012.

Tasmanian Herbarium (HO)

Mike Wilcox

The Herbarium is a department of the Tasmanian Museum and Art Gallery, Department of Economic Development, Tourism and the Arts. It is located on the campus of the University of Tasmania, conveniently close to the Department of Plant Sciences. Our hosts for the morning were Matthew Baker and Miguel de Salas. By way of introduction, we were shown several plant specimens: King's holly (*Lomatia tasmanica*) – a vegetative species in one population in the South West National Park and possibly the oldest known living plant individual at approximately 43,600 years old; some species we share (*Leptospermum scoparium*, *Leucopogon fraseri*); Huon pine from a famous 10,000 year-old clonal male plant growing on top from Mt Read (near Rosebery); *Eucalyptus globulus* from a breeding population of dwarf trees at Cape Tourville in the Freycinet National Park; and several New Zealand plants that have become naturalised in Tasmania – *Griselinia littoralis* (at Strahan), *Pittosporum crassifolium* (on King Island), *Cordyline australis*, *Phormium tenax*, and *Coprosma robusta*.

We checked out numerous specimens in the public herbarium (where one specimen of each Tasmania species is held), and were shown several species of

Orites and *Pomaderris* in the main collection – genera that had been bothering us in the field. The Herbarium has 250,000 specimens, with bar codes used for cataloguing. Important collectors have been Milligan, Gunn, Rodway, Curtis and Orchard. Mike briefly met the Director, Gintaras Kantvilas, who specialises in lichens.

Museum of Old and New Art (MONA), Hobart

Helen Preston Jones

A splinter group set off to visit the new Museum of Old and New Art, located on a peninsula jutting out in to the Derwent River, 12 km upstream from the centre of Hobart. The building is best approached by ferry, but we drove through the surrounding vineyards to an impressive 'fortress' set into the cliff with much of the structure below ground. Botanical interest was provided by the 'green roofs' and the *Allocasuarina* dominant cliff edge vegetation. David Walsh, a Tasmanian professional gambler, started his museum in 2001. It closed in 2007 and was rebuilt and reopened in 2011 in the form we now experience it. The building was designed by Norida Katsalidis and placed between and beneath two existing domestic buildings designed by Roy Grounds, built for the original owners of the 3.5 ha Morrilla Estate vineyard. The approach to the building is across a tennis court, through a reflective polished steel wall into the foyer, and from there you descend via a 15 m circular shaft into the various gallery levels cut out of the belly of the rock.

The sheer diversity of Walsh's collection sets it apart from others. Contents were an eclectic and challenging mix, curated through high tech hand-held touch screen devices, which brought up what exhibit you were near, gave you details and enabled you to save and email the resulting tour stops home. There is an emphasis on death and sex; the catacomb style building an appropriate form for the 2100-item \$100 million collection. We all found different exhibits of interest. Many exhibits were provocative, with the intention of demanding a response whether delight, comprehension or revulsion. Maybe the collection says more about the collector than the artists.

I found the building itself of most interest, but in the run through the interior, the 'botanically' related exhibits which caught my eye were: the 46 m long by 9 m high *Snake* by Sydney Nolan, composed of 1620 individual paintings, which has spent nearly 40 years in storage prior to display here in its entirety. I kept returning to *Bit.Fall* by Julius Popp 2007 – a fine waterfall dropping in front of one of the sandstone walls, with words formed by the falling droplets, which dissipated as the water fell to ground. The water, light and movement showed up the rock strata beautifully too. A nearby work by Fiona Hall – *Further Shore* 2002-5 - comprised intricate botanical drawings made on bank notes, the plants and notes

reflecting her environmental concerns of economic exploitation in those countries. In *Hiroshima in Tasmania*, Masao Okabe and Chihiro Minato 2012 the artists had taken rubbings of current rock, soil and plant debris in Hiroshima and formed an archive, both visual and physical, for the future. The rest of the group had different experiences; in my brief tour I looked for delight to the eye rather than confrontation. I suggest you visit the MONA web site to get a broader view of the art. All in all, a surfeit of stimulation and challenge, luckily settled by a good café with views over the river and then the tranquillity of the Hobart Botanical Gardens to which we returned!

Royal Tasmanian Botanical Gardens

Mike Wilcox

The Queens Domain, also known as The Domain to locals, is a small hilly area of bushland just north-east of the CBD of Hobart, alongside the Derwent River. On the side of the hill facing the river sits Government House and the Royal Tasmanian Botanical Gardens. The Domain has extensive areas of native grassy woodland, the common trees or shrubs being *Allocasuarina verticillata*, *Eucalyptus viminalis*, *Bursaria spinosa* and *Acacia mearnsii*. Kangaroo grass (*Themeda australis*) is a common grass there. As described by Kirkpatrick (2004) this type of lowland vegetation is now rare in Tasmania. Our visit to the Botanical Gardens was much enjoyed. They were established in 1818. The conifer section has numerous, large, mature specimens, with fine examples of *Pinus ponderosa*, *P. roxburghii*, *P. wallichiana*, *Sequoiadendron gigantea*, *Cedrus deodara*, *Araucaria cunninghamii*, *A. bidwillii*, *A. heterophylla* and *Agathis robusta*, to mention just a few. Other trees to catch the eye were cork oak (*Quercus suber*), pohutukawa, and a tree from Chile, *Schinus polygamus*.

Weilangta Forest

Mike Wilcox

En route to Swansea we took the back road from Copping to Orford, through the Weilangta Forest (Fig. 3). The Sandspit Forest Reserve and Three Thumbs State Forest are major blocks of public forest. Forest trees we saw were *Eucalyptus regnans*, *E. obliqua*, *E. delegatensis*, *E. pulchella*, *E. globulus*, *Acacia dealbata*, *A. melanoxylon*, and towards Orford, *E. ovata*. These are working forests managed by Forestry Tasmania for wood production, but there has been an ongoing battle with conservationists (led by Green Senator Bob Brown) to limit logging, and intensive studies have been made of the biodiversity to support setting aside more reserves (North Barker Ecosystems Service 2011). Highlights were seeing in passing the fine stand of *E. globulus* known as Blue Gum Spur, and a magnificent rainforest gully of sassafras at Robertson's Bridge in Sandspit Forest Reserve, with a dense understorey of *Dicksonia antarctica* (Plate 2A) and numerous other ferns. We



Fig. 12. Val on a *Eucalyptus regnans* stump (footholds cut by loggers a century ago), Weilangta Forest. Photo: JS, 22 March 2012.

also took a short stroll along the Weilangta Walk into secondary forest at a picnic site. There were large stumps of *Eucalyptus regnans* (Fig. 12) and regrowth forest with much blackwood, silver wattle, sassafras, *Coprosma quadrifida*, *Notelaea ligustrina*, the white-fruited form of heart berry (*Aristotelia peduncularis*) (Plate 2B) and also two climbers – *Clematis aristata* and *Parsonsia brownii*.

Freycinet National Park

Shelley Heiss-Dunlop & Mike Wilcox

This was an important part of our tour as it was our main opportunity to study the flora of the drier, eastern side of Tasmania, taking in Great Oyster Bay and the Freycinet National Park. After a pleasant 50 km drive from Swansea through low-lying farmland of vineyards, berry farms, merino sheep and swampland, we reached the car park where the Peninsula Circuit Walkway began.

Freycinet National Park stretches 50 km down Tasmania's east coast and is characterized by dramatic boulder-strewn granite rock peaks. The high granite peaks are known as The Hazards. The quartz derived from the granite has formed the beautiful white sandy beaches and the lovely pink crunchy paths that took us over a ridge and down to the world-renowned Wineglass Bay. The park was named after the two Freycinet brothers on the 1802 French Scientific expedition, and in 1916 Freycinet Peninsula was proclaimed the first National Park in

Tasmania along with Mt Field. Further additions have brought the total area of the park to 16,878 ha. We saw no evidence of the hectic whaling operations in Wineglass Bay that occurred around the Freycinet Peninsula in the early 1800s. With less than 600 mm of rainfall per annum around the coastal margins, the peninsula is dominated by dry sclerophyll forest and coastal heathland. There are low-lying areas of coastal swamp such as that between Wineglass Bay and Hazards Beach, fringed with *Melaleuca ericifolia* and *Leptospermum lanigerum*.

On the approach to Coles Bay the vegetation was a low scrubby sort of woodland with much black wattle (*Acacia mearnsii*), silver wattle, *Exocarpos cupressiformis*, drooping sheoak (*Allocasuarina verticillata*), *Banksia marginata*, *Eucalyptus ovata* and *E. amygdalina*. There was also Oyster Bay pine (*Callitris rhomboidea*).



Fig. 13. Scribbly bark of *Eucalyptus tenuiramis*, Myrtaceae, Freycinet NP. Photo: JB-W, 23 March 2012.

Our walk would take us over to Wineglass Bay via a stunning lookout point with views over Wineglass Bay and Hazards Beach (Plate 2C). Here we saw the fascinating endemic feather heath, *Pentachondra involucrata*, in flower with its curled-back densely hairy petal lobes (Plate 2D). The Wineglass Bay Track traverses granite country and was at first lined with thickets of *Leptospermum*, the species being common teatree (*L. scoparium*), smoky teatree (*L. glaucescens*) and autumn teatree *L. grandiflorum* (Plate 2E). Eucalypts seen growing from between the boulders were silver peppermint (*Eucalyptus tenuiramis*) – with a scribbly bark (Fig. 13), black peppermint (*E. amygdalina*) and close to Wineglass Bay, Tasmanian blue gum (*E. globulus*). Along the track *Hakea megadenia* was common, as was sunshine wattle (*Acacia terminalis*) and necklace sheoak (*Allocasuarina monilifera*), and there were a few Oyster Bay pines. There was plenty of *Banksia marginata* throughout with seed heads and blossom which spreads its flowering season and provides lots of nectar for wildlife. A botanical highlight was seeing a fine patch of the yellow rock orchid (*Dockrillia*

striolata subsp. *chrysantha*) cascading down a large granite boulder.

Close to the coast the most prominent understorey plants in the open *E. globulus* forest were *Lomandra longifolia* (with its distinctive divided leaf tips), sticky hop bush (*Dodonaea viscosa* subsp. *spatulata*), *Allocasuarina verticillata* and *A. monilifera*. Bracken (*Pteridium esculentum*), *Gleichenia microphylla* and *Sticherus flabellatus* were also present and an occasional grass tree (*Xanthorrhoea australis*), some with blackened trunks from past fires. Parts of the Freycinet NP are infested with the root rot pathogen *Phytophthora cinnamomi* affecting coastal heath plants and grass trees, with signage in the car park alerting walkers to this problem, but there were no boot cleaning facilities. A local endemic myrtaceous shrub, ribbed heath myrtle (*Thryptomene micrantha*) is particularly vulnerable. The bright pink flowers of *Epacris impressa* (Plate 2F), whose flowers range from white to red, and the clear yellow flowers of *Hibbertia riparia* (Plate 3A) provided some colour in the dry forest. As we descended to Wineglass Bay the loud guttural call of the yellow wattlebird, endemic to Tasmania, could be heard high in the eucalyptus trees above the track junction. We enjoyed our lunch amongst the granite boulders on the beach and the resident wallabies were photographed as they harassed picnickers for lunch scraps, despite notices asking people not to feed them (Fig. 14).

On the granite seashore we had glimpses of beds of bull kelp (*Durvillaea potatorum*), while washed up on the beach was another large, brown seaweed, *Phyllospora comosa*. The granite rocks near the seashore were spectacularly coloured orange-red by extensive growth of a crustose lichen, *Caloplaca gallowayi* (Plate 3B). It was only recently described in 2007, and is named after our own lichen man, David Galloway. *Caloplaca eos*, more pinkish in colour, was also seen.



Fig. 14. Nancy failing to ignore a Bennetts wallaby; Ann, Peter and Maureen succeeding; Wineglass Bay. Photo: JB-W, 23 March 2012.



Plate 3A. *Hibbertia riparia*, Dilleniaceae, Freycinet NP. Photo: JS, 23 March 2012.



Plate 3B. The lichen *Caloplaca gallowayi* on granite rocks, Wineglass Bay, Freycinet NP. Photo: JB-W, 23 March 2012.



Plate 3C. Eila and Peter on the snowy track to Shadow Lake, Lake St Clair. Photo: MW, 25 March 2012.



Plate 3D. Mountain blue berry (*Billardiera longiflora*), Pittosporaceae, Cynthia Bay, Lake St Clair. Photo: CM, 25 March 2012.



Plate 3E. Buttongrass (*Gymnoschoenus gymnocephalus*), Cyperaceae, Cynthia Bay, Lake St Clair. Photo: MW, 25 March 2012.



Plate 3F. Queenstown, with hillsides scarred from copper mining. Photo: MW, 26 March 2012.



Plate 4A. Eila and Peter in rainforest dominated by myrtle beech (*Nothofagus cunninghamii*), Whyte River Track, Corinna. Photo: MW, 26 March 2012.



Plate 4B. Turquoise berry (*Drymophila cyanocarpa*), Liliaceae, Whyte River Track, Corinna. Photo: JS, 26 March 2012.



Plate 4C. Mountain rocket (*Bellendena montana*), Proteaceae, Cradle Valley. Photo: MW, 27 March 2012.



Plate 4D. *Persoonia gunnii*, Proteaceae, Cradle Mt. Photo: CM, 27 March 2012.



Plate 4E. *Leptocophylla juniperina* subsp. *parvifolia*, Ericaceae, Cradle Mt NP. Photo: MW, 28 March 2012.



Plate 4F. Cataract Gorge, Launceston. Photo: JS, 29 March 2012.

On the beach itself, *Cakile maritima*, *Spinifex sericeus*, *Ficinia nodosa* and *Poa billardierei* (syn. *Austrofestuca littoralis*) were prominent plants, and coastal tussock grass (*Poa poiformis*) was also present. The coastal wattle (*Acacia sophorae*) formed a huge sprawling shrub fringing the back of the dunes binding the sand. A few coastal saltbushes (*Rhagodia candolleana*) were also present nearby.

Our visit to Freycinet National Park concluded with a stop at the outstanding visitor centre, full of good information, nature books and helpful people. Back at Swansea, later in the evening we were treated to a coastal visit to see muttonbird or short-tailed shearwater (*Puffinus tenuirostris*) arriving at their burrows along the Loontitetermairrelehoiner coastal track. It was a fitting finish to a day full of delights.



Fig. 15. Macquarie River Bridge, Ross. Photo: JM, 24 March 2012.

Midlands

Mike Wilcox

Our drive from Swansea to Lake St Clair took us all day, the route passing through the Midlands towns of Campbell Town, Ross, Oatlands and Bothwell. From Swansea to Campbell Town there were at first farms (with brown-coated merino sheep in abundance), areas of gorse, and some vineyards and walnut orchards, with the most abundant trees being *Eucalyptus pulchella*, *E. ovata*, *E. globulus*, *Acacia mearnsii* and *Exocarpos cupressiformis*. Further up, in the Wye River State Forest, *E. amygdalina*, *E. obliqua*, *E. delegatensis* and *E. viminalis* predominated.

The historic town of Ross is beautifully preserved and kept. Things of particular interest here were the Tasmanian Wool Centre; a sandstone bridge over the Macquarie River constructed by convict labour in 1836 (the third oldest bridge still in use in Australia) and commissioned by Lieutenant-Governor Arthur (Fig. 15); the fine English elm trees lining the main street; and the Crossroads with its four corners: 'Temptation' (the Man O' Ross Hotel), 'Recreation' (Town Hall), 'Salvation' (Roman Catholic Church) and 'Damnation' (Jail, now a private residence).

The Midlands is mainly a farming area, with very little forest, though some eucalypts such as *Eucalyptus*

pauciflora and *E. rodwayi* are found in this region. Once we arrived on the Lyell Highway at Hamilton, we eventually got back to forest again, particularly on the hilly section around the Tarraleah hydro-electric power station in the upper Derwent Valley. There had been a snow fall the previous night, and we started to see lots of it on the roadside towards Derwent Bridge.

Lake St Clair

Claire Stevens

Our chosen walk was from Cynthia Bay to Shadow Lake. Shadow Lake is 970 m above sea level and it appears to be so called as it sits under Mt Hugel at 1033 m. We travelled up the North side of the circuit and the booklet *60 Great Walks* says that the track climbs 270 m over a 6.6 km distance. We returned down the same track as it had taken a good number of the group all morning to ascend, with a combination of stopping for plant identification and photos as well as having to negotiate the snowy track (Plate 3C). The day was cloudy and cool but no rain or snow fell. The track started from the Visitor's Centre and went past RiversMeet which is the confluence of the Hugel and Cuvier Rivers. In the early part of the track there were tall trees of black peppermint (*Eucalyptus amygdalina*). The understorey was dense *Banksia marginata*, *Orites revolutus*, and *Leptospermum lanigerum*. In places there was also *Leptecophylla juniperina* subsp. *parvifolia* resplendent with red berries, and myrtle beech. There was also a beautiful black-berried small open shrub, *Pimelea drupacea* (Fig. 16) and the stunning scrambler, purple appleberry *Billardiera longiflora* (Plate 3D).

As we travelled upward we moved through different bodies of the above understorey. From heavy myrtle beech through to more open areas with celery-top pine then back in to myrtle beech, then *Hakea lissosperma* as well as some leatherwood which seemed to be common throughout our visit to Tasmania. A highlight was seeing *Libertia pulchella* with good seed heads on the side of the track.



Fig. 16. *Pimelea drupacea*, Thymelaeaceae, Lake St Clair. Photo: CS, 25 March 2012.



Fig. 17. Gum-topped stringybark (*Eucalyptus delegatensis* subsp. *tasmaniensis*), Myrtaceae, Aboriginal Trail, Lake St Clair. Photo: MW, 25 March 2012.

The overstorey went through six different types of *Eucalyptus* from *E. amygdalina* at the bottom, followed by *E. delegatensis* subsp. *tasmaniensis* (Fig. 17), *E. ambigua* (formerly *E. nitida* – see Bean 2009), *E. coccifera*, *E. pauciflora* and *E. subcrenulata* at the top. Right beside the lake were good sized pencil pines. A few people saw a tiger snake close to the lake (Fig. 18). At the lake there were German wasps and again this seemed to be a feature throughout our stay, with most places having large infestations. On the way back down the track the snow had begun to melt and parts became a miniature creek in the upper reaches. When we got to the bottom of the track some people diverted on to the Aboriginal Trail, which was a short walk near the Visitors Centre with Aboriginal interpretation signs along the way. On this track there were abundant fields of buttongrass (*Gymnoschoenus sphaerocephalus*) (Plate 3E) and beside one of these fields I located a fairies' aprons or Tasmanian bladderwort (*Utricularia dichotoma*) in flower.

Nelson Falls, Queenstown, Zeehan, Corinna, Pieman River

Leslie Haines

After leaving Lake St Clair for Corinna (Korerrennaa-young Tasmanian tiger) we stopped for a short walk at the beautiful Nelson Falls. This is part of the Franklin-Gordon Wild Rivers National Park and the wet rainforest vegetation was predominantly ferns,



Fig. 18. Tiger snake basking in a snow-free spot by Shadow Lake, Lake St Clair. Photo: a cautious JS, 25 March 2012.

myrtle beech celery-top pine and a diverse understorey, with *Baloskion tetraphyllum* (and *Aristotelia peduncularis* prominent. Before lunch at Queenstown, we stopped at the lookout to view the extraordinary surrounding landscape of hills scarred by copper mining (the Mt Lyell mine has been in operation here since 1896) (Plate 3F). After lunch was a stop at Zeehan to wander and enjoy the historic buildings in the old part of town such as the Gaiety Theatre, surviving from the heydays of silver mining. Zeehan now mines tin and tourism and is one of the many small towns dotted along the route which exists predominantly due to mining. It was then on to the famous 'silica road' to Corinna, an all-weather surface using the tailings from the nearby silica mine. The locals say that this beautiful white road on either side of Corinna provides a better driving experience than the sealed sections. The silica road is the sign that the amazing wilderness experience is within reach. Clusters of beehives (for leatherwood honey) were seen in several places on the road side.

We arrived at Corinna at 3.30 pm on the final road link from the south completed in 1996, and were shuttled 130 m across the Pieman River by the Fatman Ferry (Fig. 19) to the historical settlement (now a restaurant/bar and accommodation) on the north bank. The historic buildings such as 'The Old Pub' and the reconstructed cottages (each named



Fig. 19. Fatman Ferry, Pieman R., Corinna. Photos: (top) MW, 28 March; (bottom) JS, 27 March 2012.

after an early settler e.g. Savage, Kelly – both early surveyors of the area) were our homes for the night and we dined in the Tarkine Hotel. Forest surrounded the cottages, and the small plantings in front of them were myrtle beech, teatree, and *Dicksonia antarctica*.

Next morning we took the Whyte River Track (Plate 4A), which led from the cottages down to the Whyte River, a tributary of the Pieman River. We encountered *Leptospermum lanigerum* in the canopy around 25 m tall with sassafras, *Gleichenia dicarpa*, *G. microphylla*, *Grammitis pseudociliata* with hairs and toothed edge, *Dianella tasmanica*, *Aristotelia peduncularis*, *Tetracarpaea tasmanica* with dark green ovate leaves, *Nematolepis squamea*, *Baloskion tetraphyllum* and whitey-wood (*Acradenia frankliniae*) with paired, ternate, serrated leaves and glands, compared to stinkwood (*Zieria arborescens*) which had ternate leaves and no serrations.

The flat swampy area was the only place we saw the straight-trunked form of Huon pine, reaching around 25 m tall, along with large buttressed myrtle beech and celery-top pine. The understorey contained native olive (*Notelaea ligustrina*), with opposite pointed leaves and related to our *Nestegis*, Tasmanian laurel, native plum (*Cenarrhenes nitida*), horizontal (*Anodopetalum biglandulosum*) of the Cunoniaceae, and *Dicksonia antarctica*, with *Ctenopteris heterophylla*, *Asplenium flaccidum* and *Drymophila cyanocarpa* (Plate 4B) with blue berries and typical lily leaves in the understorey. *Eucalyptus* is absent in the wetter areas and this tract of forest was the most like New Zealand bush we encountered in Tasmania.

The short Huon Pine Walk by the river took us through teatree scrub (*Leptospermum riparium*), with leatherwood, Tasmanian laurel, horizontal and sassafras, with a canopy of blackwood, celery-top pine, and an old Huon pine reaching out over the river. The ground cover was *Baloskion tetraphyllum*, *Gahnia grandis* and *Blechnum wattsii*.

Midmorning we boarded the *Arcadia II* built in 1936 with Huon pine decking. We had a sunny calm day making our way slowly down the 20 km to the mouth of the Pieman River, named after a convict baker, Thomas Kent. The glacially cut river is 30 m deep, but at the edges of the river in 1-2m of water was *Triglochin procerum*, which grows considerably larger than our two species. We were lucky to have Dale Keceley as our guide with his great interest and knowledge of the plants and natural history of the area. The on-board coffees were also greatly appreciated (Fig. 20).



Fig. 20. Claire, Linda, Mark, Alison and Ann on the Arcadia II, Pieman River. Photo: CM, 27 March 2012.

The Pieman River is the southern boundary of 'The Tarkine', apparently the second largest area (400,000 ha) of cool temperate rainforest in the world. This area is the northern limit of the Huon pine, some of which are over 1000 years old. Mt Donaldson at 450 m is the highest point on the west coast and was visible in the distance covered in buttongrass following fire. This area is apparently at a Gondwanan collision boundary and consists of basalt slate mudstone with a magnesite karst cave system around 65 million years old. As in other rivers and also lakes in western Tasmania, the water of the Pieman River is dark-stained by the presence of tannins leached out of buttongrass bogs and rainforest in its catchment.

The southern side of the river was drier due to predominant south-westerly winds and was dominated by western peppermint (*Eucalyptus ambigua*) and stringybark (*E. obliqua*) with myrtle beech and blackwood common. The vegetation was very diverse with the thick trunked *Dicksonia*

antarctica and our first sighting of a second tree fern *Cyathea australis* with a fine trunk. Huon pine was common along the river edge, the female drooping form distinguishable from the male. Also along the river margins were prickly Moses (*Acacia verticillata*), *Leptospermum riparium*, *Baloskion tetraphyllum* and *Gahnia grandis*. On the way the boat did a U-turn for us to observe a perched white-breasted sea eagle, *Haliaeetus leucogaster*, and with everyone on one side we were briefly at risk of capsizing.

We went on land for lunch at Pieman Heads and a 15 minute walk to the bar at the river entrance past a small settlement of 'shacks', probably the cause of numerous weeds such as sea spurge (*Euphorbia paralias*) (Fig. 21). Coast wattle (*Acacia sophorae*) was common, and there were planted *Coprosma repens* at the settlement. Dune plants seen were coast beard heath (*Leucopogon parviflorus*), knobby sedge (*Ficinia nodosa*), boobialla (*Myoporum insulare*), dogwood (*Pomaderris apetala*), a clump of Macquarie vine or coastal lignum (*Muehlenbeckia gunnii*), and much bracken fern. Here also was *Eucalyptus ovata*, with clusters of small capsules, growing near the coast.



Fig. 21. *Euphorbia paralias*, Euphorbiaceae, near mouth of Pieman River. Photo: MW, 27 March 2012.



Fig. 22. Silica road between Corinna and Waratah. Photo: JS, 27 March 2012.

We arrived back at Corinna about 3 pm and set off north on the small silica road for our next destination (Fig. 22). On the way we passed through shrubby heath and buttongrass with gums (*Eucalyptus ambigua*) in the gullies, and some extensive mine tailing lakes near Savage River. After invading the service station at Waratah, we continued on, with a brief stop at a lookout to Cradle Mountain, our next destination, and here we saw low growing plants such as *Leptocarpus* sp., *Astelia alpina*, buttongrass, and the beautiful mountain rocket *Bellenden montana* in fruit (Plate 4C).

Cradle Mountain

Christine Major

Our exploration of the Cradle Mountain area began on the circuit track of the glacially-formed Dove Lake lying at almost 1000 m. Alongside the Dove River which flows from the lake stood pencil pine, *Diselma archeri*, myrtle beech and *Allocasuarina zephyrea* contrasting with the lower foreground vegetation which included *Gleichenia alpina*, *Gymnoschoenus sphaerocephalus*, *Leptospermum nitidum*, *Bauera rubioides* and *Gahnia grandis*. The plant communities encircling the lake varied. In the more open shrub-dominated areas we observed flowers and berries on *Persoonia gunnii* (Plate 4D) the woody seeds of swamp honeymyrtle (*Melaleuca squamea*), red berries on *Cyathodes straminea* and *Leptecophylla juniperina* subsp. *parvifolia* (Plate 4E), mauve berries on *Trochocarpa gunnii*, and *Pimelea linifolia* and *Archeria eriocarpa* in seed (Fig. 23). There were individual *Oxylobium ellipticum*, *Boronia citriodora* and *Stylidium graminifolium* in flower and floral remnants were present on *Olearia persoonioides*. Where fertility of the soil allowed, significant areas of forest extended from the shoreline well up the cliff faces.

Amid many rainforest and wet sclerophyll trees already familiar to us, we at last encountered the deciduous beech, fagus or tanglefoot, *Nothofagus gunnii* (Fig. 24), and King Billy Pine, *Athrotaxis*



Fig. 23. *Archeria eriocarpa*, Ericaceae, Cradle Mt. Photo: CM, 28 March 2012.

selaginoides (see 'Conifers' section below), which is at its northern limit here. Some late *Cennarrhenes nitida* bore spikes of white flowers, while others were in fruit. On a quartzite face grew, surprisingly, *Aristolelia peduncularis* in flower and Christmas Bells (*Blandfordia punicea*) in seed. In damper areas close to the lake shore *Utricularia dichotoma*, and tiny *Cotula alpina* and *Plantago tasmanica* were found.

A steep connecting track climbed to the coniferous heathland of Marion's Lookout (approximately 1250 m). The low spreading conifers *Microcachrys tetragona*, *Diselma archeri* and *Podocarpus lawrencei* were accompanied by a variety of alpiners: *Campynema lineare*, *Chionogentias diemensis* subsp. *diemensis* and *Helichrysum milliganii* were in flower, whereas only the foliage was observed for *Olearia pinifolia*, *O. obcordata*, *Ewartia meredithiae*, *Exocarpos humifusus*, *Rubus gunnii* and *Euphrasia* sp. The Overland track descended via Crater Lake (Fig. 25) and Crater Falls, the latter set amidst large beech trees of both species. Finally the path crossed fields of *Gymnoschoenus sphaerocephalus* with stands of *Richea pandanifolia* flanking Ronny Creek. In the late afternoon a number of wombats were observed feeding and it was evident that many nested in the dense buttongrass tussocks (Fig. 26). The Cradle Mountain Holiday Park cottages served as our accommodation, set in a forest of *Eucalyptus delegatensis*, with a dense shrub understorey in which *Tasmannia lanceolata* was particularly abundant. Those who went on the night-time safari to see wild animals were enthralled with the abundant sightings of Bennett's wallaby, pademelon, wombat and brush-tail possum; and some also visited the night-time Tasmanian devil sanctuary, which also included seeing eastern quoll – a kind of marsupial cat.

Cradle Mountain to Launceston, via upper Wilmot and Mersey Rivers, Mole Creek Karst National Park, Mole Creek and Deloraine

Helen Preston Jones

We moved from the Cradle Mountain National Park on a very winding road, rising and falling to traverse the deeply-dissected forest landscape, on our way to Mole Creek in the Karst National Park. The weather was beautiful, the views spectacular, so we made a couple of scenic stops en route to have a look at the location of the Wilmot power scheme and the receding ranges of the forested heart of Tasmania. Here we were surrounded by black peppermint (*Eucalyptus amygdalina*), a small to medium-sized, narrow-leaved tree endemic to Tasmania where it is widespread in the drier, north-eastern half of the island. On this route we also saw production eucalypt forest (*E. nitens* plantations and *E. obliqua* regrowth) mixed with natural rainforest, with occasional patches of pasture on the flatter areas. The Western Bluff stood out, part of the long ridge of the Western Tiers,



Fig. 24. Fagus or tanglefoot (*Nothofagus gunnii*), Nothofagaceae, Dove Lake, Cradle Mountain. Photo: MW, 28 March 2012.



Fig. 25. Army trainees encountered on Overland Track near Marion's Lookout, above Crater Lake, Cradle Mt. Photo: MW, 28 March 2012.



Fig. 26. Wombat, Overland Track near Ronny Creek, Cradle Valley. Photo: CM, 28 March 2012.

lightly vegetated, but the karst landscape vegetation did not look significantly different from other areas.

We stopped briefly at the entrance to the Marakoopa caves, a cool constant 9°C, and walked along the outflow from the limestone caves through the 'Fantastic Fern Gully' track, with many ground ferns under large *Dicksonia antarctica* - more work for Maureen. This was the most prolific fern habitat we had seen on our travels, both in quantity and variety, concentrated around the outflowing river (for details of ferns, see Maureen's write up below.) The overarching rainforest canopy was one of sassafras (*Atherosperma moschatum*), blackwood (*Acacia melanoxylon*), some myrtle beech (*Nothofagus cunninghamii*) - measured with John Millet's trusty diameter tape at 1.06 m diameter, *Eucalyptus regnans*, and some remarkably tall silver wattle trees (*Acacia dealbata*), together with musk (*Olearia argophylla*) and the ever present dogwood (*Pomaderris apetala*), again growing very tall. Bright yellow flat worms, the Tasmanian Canary Worm (*Fletchamia sugdeni*) on the path made a change from worrying about leeches. At least you could see them and they eat worms, not blood.

The small settlement of Mole Creek sits in a bowl in the mountains surrounded by broader pasture areas. Buildings lined one side of the street, as the railway used to run along the other side. A stream ran behind the buildings, and we stood silently in expectation of the local platypus (the 'mole' of Mole Creek) population, which unsurprisingly remained hidden. Red-berried hawthorn trees (*Crataegus monogyna*), remnants of early hedges became a feature of the farmland toward Deloraine, our next stop to check out the local museum (Fig. 1). We learned that the famous racehorse Malua was bred here in Tasmania, being part of the Calstock Horse Stud in the 1879. With victories in major races ranging from five and a half furlongs to three and a quarter miles, Malua had a record of successes never equalled on the Australian turf. These included the Oakleigh Handicap, Newmarket Handicap, Adelaide Cup and Melbourne Cup, and he won the Geelong Cup as a 10 year old before going to stud, and was inducted into the Australian Racing Museum Hall of Fame in 2003. And so, on to Launceston through more prosperous farmland, leaving the forests behind us.

Cataract Gorge, Launceston

Helen Preston Jones

Launceston is situated at the confluence of two rivers, some distance inland from the sea. One of these, the South Esk, cuts its way through the Jurassic dolerite to form a spectacular steep-sided gorge with dry sclerophyll forest cover (Plate 4F). Specimens from the area have been collected as early as 1804, by Robert Brown (Potts et al. 2006). The riparian strip of the Gorge was initially developed as private pleasure gardens run by a trust, but in

1890 was passed to the city. 'The gardens' in true Victorian style were developed with scenic pathways, lookouts and exotic plantings, on both sides of the river. More recent boardwalks, bridge and gondola and restaurants continue this theme, and it is a major recreational resource for locals. There is an open-air pool and Victorian house out of which is run an Artist-in-Residence Programme. The landforms and rock colour and water were impressive, the vegetation less so as it was compromised with quantities of exotic trees (familiar *Pinus radiata*, *P. pinaster*, *P. wallichiana*, *Agathis robusta*) and significant weed growth, something of which we had not seen much before. But there was an open cover of *Allocasuarina verticillata* on much of the cliff face and we recognised *Acacia dealbata*, the large-fruited *Pittosporum undulatum*, *Dodonaea lucida* also in fruit, *Leptospermum lanigerum*, *Pomaderris apetala*, *Bedfordia salicina*, and to our great joy, found *Cheilanthes austrotenuifolia* growing out of cracks in the massive rocks. I think I do the Gorge an injustice, and that it would deserve more than the couple of hours we spent there, but the contrast with the pristine nature of the forests we had visited was too great.

Some plant groups

Ferns

Maureen Young

Tasmania has 104 species of Pteridophytes, although one, *Botrychium australe*, is thought to be extinct; this number includes two adventives (Garrett 1996). Seven species are endemic to Tasmania, four of which are species of *Isoetes*. With seventy species shared, there is a close relationship between the fern flora of Tasmania and New Zealand, which is surprising considering the distance between the two. There is some difference in the names used in Australia and those used in New Zealand.

Ferns, apart from a few common species, are not an important component of the flora, with more than forty species having an extremely limited distribution. In the lower altitudes the common species include the spectacular tree fern, *Dicksonia antarctica* (Plate 5A) known locally as man fern, *Blechnum wattsii*, *B. nudum*, *Polystichum proliferum*, and bracken (*Pteridium esculentum*). These are all harsh-textured ferns, obviously unpalatable to grazing marsupials. Locally common as a colonist of disturbed sites is *Hypolepis rugosula*, often growing with *Histiopteris incisa*. Of the five species of *Hypolepis*, *H. rugosula* is the only one with a wide distribution; however, a few fronds of *H. glandulifera* (with rusty hairs, some gland-tipped) were seen near our accommodation at both Corinna and Cradle Mountain. Two umbrella ferns, *Gleichenia dicarpa* and *G. microphylla* were commonly seen along road and trackside, and the small-statured *G. alpina* was abundant at higher altitudes. The related *Sticherus tener* was not so



Plate 5A. *Dicksonia antarctica*, Huon Pine Walk, Tahune Forest. Photo: JS, 21 March 2012.



Plate 5B. *Sphaerocionium applanatum*, on King Billy pine, Dove L., Cradle Mt. Photo: BD, 27 March 2012.



Plate 5C. Blackwood (*Acacia melanoxylon*), Leguminosae, Pieman River, Corinna. Photo: MW, 27 March 2012.



Plate 5D. Pencil pines (*Athrotaxis cupressoides*), Lake Dobson, Mt Field NP. Photo: MW, 20 March 2012.



Plate 5E. Pencil pine (*Athrotaxis cupressoides*) at water's edge, Lake Dobson, Mt Field NP. Photo: JS, 20 March 2012.



Plate 5F. Mike with a large King Billy pine (*A. selaginoides*), Dove L., Cradle Mt. Photo: MW, 28 March 2012.



Plate 6A. King Billy pine (*Athrotaxis cupressoides*), Dove L., Cradle Mt. Photo: JS, 28 March 2012.



Plate 6B. King Billy pines in the 'Ballroom Grove', Dove Lake, Cradle Mt. Photo: JS, 28 March 2012.



Plate 6C. King Billy pine, Dove Lake, Cradle Mt. Photo: JS, 28 March 2012.



Plate 6D. Strawberry pine (*Microcachrys tetragona*), spent male cones, Marion's Lookout, Cradle Mt. Photo: CM, 28 March 2012.

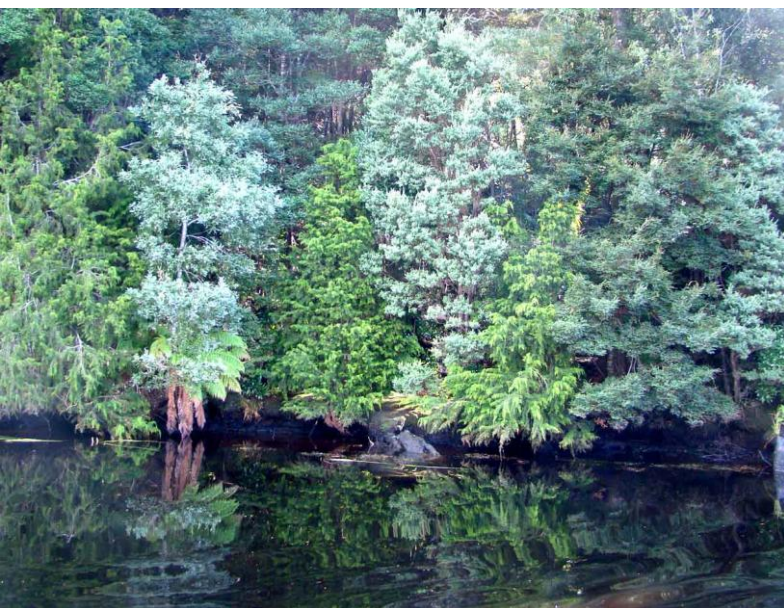


Plate 6E. Huon pines (*Lagarostrobos franklinii*), light green weeping foliage, Pieman R., Corinna. Photo: JS, 26 March 2012.



Plate 6F. *Baloskion tetraphyllum*, Whyte River Track, Corinna. Photo: MW, 27 March 2012.

common, but plants grew in rock crevices and damp roadside banks.

In the Wielangta Forest a short loop track crossing a stream in a damp gully was the most spectacular of the fern sites visited (Plate 2A). First we came to a rock overhang where the necklace fern (*Asplenium flabellifolium*) and *Blechnum chambersii* were growing, together with a mystery fern with long, dark green, entire sterile fronds and equally long, tightly rolled fertile fronds. Although most unlike the pendulous, pinnatifid *Blechnum patersonii* that we had seen on our 2009 trip to Sydney and the Blue Mountains, this is, indeed, what it turned out to be. Also on the floor of the overhang was a mat of *Hymenophyllum australe*. The triangular frond-shape and winged stipe makes this an easy filmy fern to identify, although on larger fronds the wing tends to be wavy and the species hard to separate from our *H. flexuosum*. The thick trunks of the many *Dicksonia* tree ferns were draped with long fronds of *H. flabellatum* on the lower half, and thick mats of *Crepidomanes* (*Trichomanes*) *venosum* on the upper half. This pattern was invariable at this site, and made one wonder at the slight change of conditions that dictate which niche is occupied by which species. Also growing on the tree fern trunks were *Rumohra adiantiformis* (abundant in all rainforest areas), *Microsorium pustulatum* (the majority of fronds undivided) and *Asplenium bulbiferum* subsp. *gracillimum*, (our *A. gracillimum*).

Three more filmy ferns that were common in all rainforests visited were two with toothed margins (*Hymenophyllum cupressiforme* and *H. peltatum*), and one with smooth margins, *H. rarum*, looking most unlike its New Zealand counterpart. Of the grammitids, *Ctenopteris heterophylla* grew sparsely, and *Grammitis billardierei* was commonly in rainforest, and on the Whyte River walk at Corinna the hairy *G. pseudociliata* was found, the scalloped edges to the fronds being the give-away. *Grammitis magellanica* subsp. *nothofageti*, with narrow fronds and a tendency to grow higher up on *Nothofagus cunninghamii* and other trees, was also common.

Also found in rainforests were occasional *Asplenium appendiculatum*, *A. flaccidum*, *Blechnum fluviatile*, *Tmesipteris elongata* and *T. obliqua*. A wisp of *Lindsaea linearis* was found in the dry sclerophyll growth at Freycinet National Park, and on a large rock there, growing with the orchid, *Dockrillia striolata*, was a small plant of *Huperzia varia*. At high altitudes *Lycopodium fastigiatum* was common and a few fronds of *Blechnum penna-marina* subsp. *alpina* were seen.

Two species of *Lycopodiella* proved difficult to identify, as we were not able to collect specimens, and the book on Tasmanian ferns is out of print. At Dove Lake there were plants with rigid, prostrate

stems that were dull green with a reddish tinge and which had lateral cones; this may have been *L. diffusa*. The identity of the species found on dune slacks at the mouth of the Pieman River, downstream from Corinna, is more problematical. It had terminal fertile cones. Of the species listed in the Tasmanian Vascular Plant Census, *L. serpentina* is one possibility. It did not look at all like the plant I am used to seeing at Lake Ohia on the Karikari Peninsula, but many of our shared ferns are hard to recognise in Tasmania.

While cruising the Pieman River we sighted a few soft tree ferns (*Cyathea australis*) from the boat, but all of the many other tree ferns seen were the ubiquitous *Dicksonia antarctica*. These handsome plants, with thick, fibrous trunks, were dominant wherever it was damp enough – in wet sclerophyll forest or rain forest – but became less common in higher altitudes. As we crunched through snow on the walk to Shadow Lake I noted two or three plants, but all were without trunks.

Having read that the fern that used to share its name with our *Hymenophyllum malingii*, but is now known as *Sphaerocionium applanatum*, was to be found on the pencil pine (*Athrotaxis cupressoides*); I kept alert whenever the pine was present. It wasn't until near the end of the trip, when at Dove Lake we finally met up with King Billy pine (*A. selaginoides*), that my search was successful. The trunks of several gnarled old trees were host to the small grey fronds of this odd fern (Plate 5B). The thick covering of stellate hairs makes it hard to believe that the fern is alive, let alone a filmy fern. In New Zealand, *H. malingii* usually grows on kaikawaka (*Libocedrus bidwillii*).

To round off the fern discoveries, on our final day we found *Azolla filiculoides* floating in a pond in a garden at Mole Creek, and on the Cataract Walk in Launceston we added *Adiantum aethiopicum*, *Cheilanthes austrotenuifolia* and *Doodia australis*.

Rainforest plants

Mike Wilcox

Tasmania's cool temperate rainforest occurs mostly in the wetter western half of the state. We had several opportunities to see rainforest, both as an understorey below emergent tall eucalypts, and as a pure forest, so became familiar with the main trees. Myrtle beech (*Nothofagus cunninghamii*) is highly characteristic of Tasmanian rainforest (Plate 4A). The most common associates are celery-top pine (*Phyllocladus aspleniifolius*) and sassafras (*Atherosperma moschatum*), both of a characteristic conical, straight-stemmed form, particularly in the sapling stage, and leatherwood *Eucryphia lucida*. Sassafras in particular is gregarious, tending to form pure stands (as in the small rainforest patch in Wielangta Forest) (Plate 2A). Leatherwood is renowned for its honey. Trees were in flower, and in several places we saw collections of beehives.

Blackwood (*Acacia melanoxylon*) was also abundant in many of the rainforests we visited (Plate 5C). At Corinna it was surprising to see large trees of woolly tea tree (*Leptospermum lanigerum*) within the rainforest, and silver wattle (*Acacia dealbata*) was also often present in the canopy – a real ‘grow anywhere’ tree.

Rainforest has a characteristic assemblage of understorey trees and shrubs, which, again, we saw on numerous occasions. Tasmanian laurel (*Anopterus glandulosus*), horizontal (*Anodopetalum biglandulosum*), stinkwood (*Zieria arborescens*), whitey wood (*Acradenia frankliniae*), satinwood (*Nematolepis squamea*), native olive (*Notelaea ligustrina*) and native plum (*Cenarrhenes nitida*) were widespread. At Corinna we were pleased to come across *Tetracarpaea tasmanica*, a monotypic endemic shrub of the family Escalloniaceae. *Trochocarpa cunninghamii* was both in flower and fruit on the Pandani Track, Mt Field National Park.

Conifers

Joshua Salter

Despite its small size, Tasmania is a remarkable centre of diversity for conifers, having eleven species in three families, nine species being endemic (Table 1; Gibson et al. 1995; Bowman & Harris 1995). Ten species were seen by at least some of us. As the table shows, most of the places listed had just one or two conifer species, an exception being Cradle Mountain, where six were seen. Celery-top pine, which is widespread throughout the temperate rainforests of southern and western Tasmania, was seen in most rainforests we visited. Unlike in New Zealand, where the dominant emergents of the

forests are often conifers, the dominant emergents in those Tasmanian forests that we visited (even the rainforests) were eucalypts (Myrtaceae). Most Tasmanian conifers are cool-temperate species, ranging from the small or medium-sized trees found in lowland and montane rainforests, to prostrate shrubs in sub-alpine to alpine habitats. On our trip we saw them in lowland rainforests in competition with giant emergent eucalypts and sub-canopy angiosperms such as leatherwood (*Eucryphia lucida*), sassafras (*Atherosperma moschatum*) and so-called myrtle beech (*Nothofagus cunninghamii*); in higher altitude habitats the shrubby and prostrate conifers were competing with other angiosperms (such as Asteraceae, Ericaceae, Proteaceae) (Cameron 2000). *Callitris* species (Cupressaceae) were the exception, occurring in the dry sclerophyll woodlands of the Freycinet Peninsula, on the east coast.

Cupressaceae: Pencil pine (*Athrotaxis cupressoides*) has tightly appressed and overlapping scale leaves, and small globose cones. It usually forms symmetrical narrowly conical trees (Plate 5D), but on lake margins, where it is subject to extremes of weather and bank collapse, wonderfully gnarled individuals, clearly many hundreds of years old, were seen giving their two-fingered salute to the elements (Plate 5E).

King Billy pine (*A. selaginoides*) (Plate 5F) has larger globose cones than pencil pine, and its scale leaves are more like upwardly curved awls, with distinctive glaucous-white bands on their upper faces (Plate 6A). Although a single juvenile was spotted on the roadside in Mt. Field National Park (necessitating an abrupt halt of our three vans on the narrow unsealed

Table 1: Tasmanian conifers and where we saw them on field trip. Most other places visited, where no conifers were seen, have been omitted. E= endemic to Tasmania; + = seen by at least one of us on field trip; +v=seen from van; # = seen by JS after field trip; p=not seen but known to be present.

Tasmanian conifers	MW	LD	TF	HM	LSC	FNP	NF	PR	CM	MN
<u>Cupressaceae:</u>										
<i>Athrotaxis cupressoides</i>	E	+							+	
<i>Athrotaxis laxifolia</i>	E								+	
<i>Athrotaxis selaginoides</i>	E								+	
<i>Callitris rhomboidea</i>							+			#
<i>Callitris oblonga</i>	E						+v			
<i>Diselma archeri</i>	E	+							+	
<u>Podocarpaceae:</u>										
<i>Lagarostrobos franklinii</i>	E		+					+		
<i>Microcachrys tetragona</i>	E								+	
<i>Podocarpus lawrencei</i>		p			p				+	
<i>Ptherosphaera hookeriana</i>	E				p				P	
<u>Phyllocladaceae:</u>										
<i>Phyllocladus aspleniifolius</i>	E		+	+	+		+	+		

MW=Mt Wellington; LD=Lake Dobson, Mt Field National Park (NP); TF= Tahune Forest; HM=Hartz Mountains NP; LSC=Lake St. Clair NP; FNP=Freycinet NP; NF=Nelson Falls (Hwy A10); PR=Pieman River; CM= Cradle Mountain NP; MN= Mt Nelson, Hobart.

road for a closer look), it wasn't until we walked around Dove Lake in Cradle Mt. National Park that we were able to see some grand individuals, in several separate stands, one called the Ballroom Grove (Plate 6B). The largest trees, with trunks over 1m diameter, had a form not unlike kauri, the foliage in tufts on upcurved branches like candelabra (Plate 6C). Several juveniles within the Ballroom Grove were much more attenuated than others we had seen growing in the open. These lanky individuals were probably young *A. laxifolia*, a third species considered to be a hybrid between pencil pine and King Billy pine, since it occurs only in areas where these two species are present (Gibson et al. 1995).



Fig. 27. Cheshunt pine (*Diselma archeri*), Cupressaceae, Marion's Lookout, Cradle Mountain. Photo: MW, 28 March 2012.

Cheshunt pine (*Diselma archeri*) is a slow-growing shrubby tree, its drooping branchlets clothed in dark green scale leaves. In sub-alpine conifer heaths they adopt stunted compact forms (Fig. 27), but at Lake Dobson, the Cheshunt pines were 3 m tall shrubs growing beneath a eucalypt canopy among the pencil pines and tall 'grass' trees (*Richea pandanifolia*, Ericaceae).

Oyster Bay pine (*Callitris rhomboidea*) was the only conifer seen in the dry sclerophyll forest of the Freycinet National Park. *Callitris* is unusual in the Cupressaceae in having scale leaves in threes, the cones also having fertile scales in two whorls of three. The hard woody cones appear to be dependent on fire to release the seeds, rather like those of *Hakea* (Proteaceae), another sclerophyllous genus very much in evidence in this dry habitat. South Esk pine (*Callitris oblonga*). A stand of this much smaller and rarer, riparian species (Gibson et al. 1995), was seen by some as our vans crossed the Apsley River bridge en route to the Freycinet Peninsula.

Podocarpaceae: Mountain plum pine (*Podocarpus lawrencei*) is the only Tasmanian conifer with flattened leaves that have a distinct mid-vein and a petiole. The female cone in this species has the

typical podocarp cone, a seed perched on a fleshy 'foot'. Those who slogged up to Marion's Lookout (about 1200 m asl, in Cradle Mt. NP) saw this alpine podocarp keeping a low profile among other alpine shrubs like strawberry pines (see below). A single female cone was seen, minus the seed, so that the red fleshy base resembled a strange berry.

The strawberry pine (*Microcachrys tetragona*) has scale leaves in opposite decussate arrangement, each scale with a pronounced keel, making the stem square in cross section. Like all podocarps the strawberry pine has inverted ovules; the cones have several closely-overlapping fertile scales, and when ripe they become red and fleshy, to my mind rather more reminiscent of a raspberry than a strawberry. No female cones were found, but one male plant was seen, near Marion's Lookout, with dehisced pollen cones (Plate 6D).

As already mentioned, no one saw *Pherosphaera hookeriana* – as far as we know anyway, except in the Botanical Gardens. *Pherosphaera*, *Microcachrys* and *Diselma*, can be very similar, especially when female cones are absent, and when they are growing together in sub-alpine habitats. Indeed they are so similar that some early collections have been found to have more than one species to a herbarium sheet, and their taxonomic literature has been "chaotic and confusing" (Brummitt et al. 2004, p.529). Adding to the confusion, *Pherosphaera* species have been for many years known as *Microstrobos* (e.g. Gibson 1995; Cameron 2000; Farjon 2001). Brummitt et al. (2004) have shown *Microstrobos* to be an invalid name, and reinstated the earlier name, *Pherosphaera*.

Huon pine (*Lagarostrobos franklinii*) is a very slow-growing forest tree now confined to narrow bands of riverine forest and swampy land. It has pendent branchlets covered in overlapping spirally arranged scale leaves. The small but lax female cones have fertile bracts with inverted ovules, partially enveloped by an epimatium. Unlike its New Zealand relative, *Manoao colensoi*, the epimatium in Huon pine becomes dry and papery at maturity, and the seeds are dispersed by gravity or water, rather than by birds (Molloy 1995). From the *Arcadia II*, on which we took a leisurely cruise down the Pieman River, the weeping habit made them readily visible among the diverse greenery of the riverine forests (Plate 6E), especially the female trees whose foliage, according to our on-board guide, Dale Kecely, was more weeping than that of the males.

Phyllocladaceae: Celery-top pine (*Phyllocladus aspleniifolius*) was more widespread; we saw both seedlings and sizeable trees in several different forests, ranging from low altitude rainforest (approx. 70 m above sea level) at Tahune to the subalpine shrubland of the Hartz Mountains National Park

(approx. 750 m asl). At Lake St Clair, seedlings appeared unaffected by a recent snowfall. The mature trees were very like *P. trichomanoides* (tanekaha), with the familiar horizontal ridges on the trunk (a result of the original whorled arrangement of branchlets).

Concluding comments: Although Huon pine (Millington 1982), pencil pine and King Billy pine seemed to prefer river banks and lake margins it was clear that all of these species can occur on higher slopes in high rainfall areas (Cameron 2000). Their apparent abundance close to watercourses may be more a reflection of their susceptibility to bushfires than an indication of habitat preference. Most of the other conifers also lack fire tolerance, and now occur largely within national parks. These Tasmanian conifers, ancient (i.e. Gondwanan) relict species that were once more widespread (Hill 1995), are now only just holding their own on the wetter fringes in the relatively drier climate that now prevails in Tasmania. Farjon and Page (1999) recommend that active fire protection will be needed to prevent further decline of many Tasmanian endemic conifers.

Eucalypts

Mike Wilcox

Tasmania has a modest eucalypt flora (32 taxa: 30 species and 2 subspecies) compared with the other states, lacking major groups such as bloodwoods (*Corymbia*), red gums, boxes, ironbarks, and true stringybarks. The Tasmanian eucalypts fall into the ash, peppermint and blue gum/swamp gum groups and are notable for the huge size attained by a number of the species. Dry sclerophyll forests of eucalypts predominate on the eastern side, with the commercially-important wet sclerophyll forests (with rainforest) abundant in the south west. There is a very extensive literature on the Tasmanian eucalypts, some particularly useful ones being Kantvilas (1996), Williams & Potts (1996), Nicolle (2006), and Wiltshire & Potts (2007).

Of the ash group, messmate stringybark (*Eucalyptus obliqua*) – the type species of the genus – is very common and widespread in Tasmania. We first met with it along the Pipeline Track at Fern Tree at the foot of Mt Wellington, saw it at its very best in the Tahune Forest AirWalk (Fig. 10), encountered it in scattered groves down the Pieman River, and noted its abundance in the upper Wilmot and Forth River catchments (e.g. Mersey State Forest) en route from Cradle Mountain to Mole Creek. It is Tasmania's most abundant and important timber tree ('Tasmanian oak'). Giant ash (*E. regnans*) is famous for being the world's tallest-known flowering plant. It is restricted in Tasmania to moist sites with good, fertile soil, generally below 600 m elevation. The best examples we saw were in the Big Trees Walk in Mt Field National Park, where there were several trees in the 70-80 m category (Fig. 9), regrowth stands in the

Arve River catchment near Geeveston, in Weilangta Forest, and at Mole Creek Karst National Park. Gum-topped stringybark or alpine ash (*E. delegatensis* subsp. *tasmaniensis*) was widespread, at higher elevations, with some particularly fine stands at Lake St Clair (Fig. 17). The blue, vertically-hanging juvenile leaves are very conspicuous on roadsides. Another ash eucalypt, snow gum (*E. pauciflora*), was noted during our drive from Swansea to Campbell Town, and was also present near Shadow Lake.

The peppermints comprised another important Tasmanian group of eucalypts. Silver peppermint (*R. tenuiramis*) was seen on sandstone substrate on the outskirts of Hobart, and on granite at Freycinet National Park; white peppermint (*E. pulchella*) was noted on dolerite substrate near Hobart and in Weilangta Forest; black peppermint (*E. amygdalina*) was found in the central and eastern areas; snow peppermint (*E. coccifera*) was seen abundantly in the mountains, including the dwarf, tri-flowered form on the summit of Mt Wellington (Fig. 7); and western peppermint (*E. ambigua*, syn. *E. nitida*) became a dominant eucalypt in the wetter, quartzite country in the west, such as between Corinna and Waratah, assuming a mallee habit on rocky sites. The large peppermint trees in the camping/cabin area at Lake St Clair appeared to be intermediate between *E. amygdalina* (dull foliage, fully-barked) and *E. ambigua* (extensive smooth bark on the trunk). These two species are known to intergrade from east to west.

Eucalypts of the blue gum group to stand out were Tasmanian blue gum (*E. globulus*), seen at Fern Tree (Hobart), Weilangta Forest (Blue Gum Spur), and on the lower part of the track to Wineglass Bay in Freycinet National Park; and the very blue heart-leaved silver gum (*E. cordata*) glimpsed in groups on the roadside as we travelled south of Hobart via Kingston and Huonville. Tasmanian yellow gums (*E. johnstonii*) of large size were noted at Mt Field National Park, and on Mt Wellington, while its smaller cousin, alpine yellow gum (*E. subcrenulata*), was a common associate of snow peppermint in the Hartz Mountains, Cradle Mountain and Mt Field National Parks. A short form of black gum (*E. ovata*) was the common eucalypt near our landing place towards the mouth of the Pieman River.

Eucalypt plantations are widespread, now totalling about 200,000 ha and are almost exclusively of shining gum (*E. nitens*), native to Victoria.

Wattles

Mike Wilcox

As elsewhere in Australia, *Acacia* is very prominent in Tasmania (Gray 1990). Silver wattle (*Acacia dealbata*) was abundant, ranging from an impressive forest tree to 30 m tall in wet sclerophyll forest, to smaller trees forming dense thickets. It is a rapid coloniser of bare sites on forest margins. Black wattle (*A. mearnsii*)

was mainly seen on the drier eastern side of Tasmania, being common around Hobart and along the road to Coles Bay on the Freycinet Peninsula. At Swansea there is a restored bark mill in a museum devoted to the history of the black wattle tanning industry. A third bipinnate wattle, sunshine wattle (*A. terminalis*), was seen in several places, including Freycinet National Park.

Blackwood (*A. melanoxyton*) was very widespread either as a component of mixed rainforest, or as a subcanopy tree in tall wet sclerophyll forest. Its timber is esteemed for fine furniture and craft work. Blackwood stands (Plate 5C) were much admired along the Pieman River (with prominent broccoli-like grey crowns), while some particularly large trees were noted with *Eucalyptus regnans* in the Mole Creek Karst National Park. At the end of our tour, Bev and Geoff Davidson visited north-west Tasmania and saw the famous blackwood forest in the Dismal Swamp - a swamp forest of nearly pure blackwood occupying a karst depression.

Prickly Moses (*A. verticillata*) has a liking for river banks, and we found it to be plentiful at Corinna, and near the mouth of the Pieman River. Sallow wattle (*A. mucronata* subsp. *dependens*) formed a neat bush in the colder uplands, being noted by us on Mt Wellington, at Lake St Clair, and on the Dove Lake circuit track at Cradle Mountain. Coast wattle (*A. sophorae*) is a characteristic sand dune shrub, some good examples being at Wineglass Bay in Freycinet National Park, and at the mouth of the Pieman River.

Some Tasmanian monocots

Mike Wilcox

In soon became apparent that a wide range of monocots is present in Tasmania, from diverse families, and they are a very significant component of the flora, and sometimes the vegetation. Of the sedges (Cyperaceae), we would give pride of place to cutting grass (*Gahnia grandis*). It is a large, conspicuous plant, at home in rainforest, eucalypt forest and subalpine woodland and we saw it every day. Buttongrass, *Gymnoschoenus sphaerocephalus* (Plate 3E), is Tasmania's most famous sedge, being the principal plant in the extensive buttongrass plains in the west (Marsden-Smedley et al. 1999). It flourishes in boggy areas and is very resistant to fire, and its main associates include *Lepidosperma filiforme*, *Sprengelia incarnata*, and several restiads. Alpine straw sedge (*Carpha alpina*), which is also native to New Zealand, occurred in all the mountain sites we visited, usually in somewhat boggy heathland. Tall sedge (*Carex appressa*) was widespread on damp sites.

Restiads (Restionaceae) are very well represented in Tasmania, being especially adapted to the widespread boggy, impoverished soils in the west. A tall forest species, tassel-cord rush (*Baloskion*

tetraphyllum) was a feature of our forest walks at Nelson Falls and Corinna (Plate 6F). It is a tall, handsome plant, sometimes sold in Auckland nurseries. Another restiad we recognised was spreading rope rush (*Empodisma minus*), commonly seen in damp, subalpine places, while *Baloskion australe* occurred in alpine sedgeland on Mt Wellington. Others found with buttongrass are *Leptocarpus tenax*, *Lepyrodia tasmanica*, *Eurychorda complanata* and *Chordifex hookeri*. *Baloskion*, *Eurychorda* and *Chordifex* were once included in the genus *Restio*.

Grasses (Poaceae) were generally passed by without much comment. In the alpine areas Tasmania does not have any snow grasses (*Chionochloa*), but instead there is a small tussock called Tasmania snow grass (*Poa gunnii*), which was common on Mt Wellington. On the coast at Wineglass Bay there was beach spinifex (*Spinifex sericeus*), beach fescue (*Poa billardierei*, syn. *Austrofestuca littoralis*), and coastal tussock grass (*Poa poiformis*). Silver tussock (*Poa labillardierei*), which looked like our *Poa cita*, and kangaroo grass (*Themeda australis*) were seen in eastern areas, while reed grass (*Phragmites australis*) formed dense stands along the Derwent (Hobart) and Tamar (Launceston) Rivers.

Tasmania has a good many plants in the order Asparagales. Orchids (Orchidaceae) are a big group, with 220 species in Tasmania. Because of the season, we only saw two species. Yellow rock orchid (*Dockrillia striolata* subsp. *chrysantha*) was seen in Freycinet National Park growing on rock, and a puny little plant of *Pterostylis parviflora* was noted by Anne and Maureen along the Wineglass Bay track. In the family Asteliaceae we came across pineapple grass (*Astelia alpina*) on top of Mt Wellington, and also in the Hartz Mountains. In the field it somewhat resembles a *Celmisia*. *Milligania* has five species, the one we saw being *M. densiflora* (in the Hartz Mts) (Fig. 11). In the Iridaceae, *Libertia pulchella* was our best find. It is a rainforest plant, commonly seen at the base of big trees such as myrtle beech. The uniquely Australian family Blandfordiaceae (Christmas bells) is represented in Tasmania by *Blandfordia punicea*, which we saw commonly in damp areas in the west, but not in flower. In the Xanthorrhoeaceae, the flax lily (*Dianella tasmanica*) was fairly common, the grass tree (*Xanthorrhoea australis*) was seen only rarely, in Freycinet National Park, while in the Asparagaceae, *Lomandra longifolia* was especially common in *Eucalyptus globulus* woodland on the lower part of the track to Wineglass Bay, Freycinet National Park.

To round out this brief account of the Monocots, horses' mane weed (*Ruppia polycarpa*, Potamogetonaceae) was common washed up on the beach at Pieman River mouth; green mountain lily (*Campynema lineare*, Campynemataceae, Liliales), an

ancient monotypic genus, was found in Mt Field National Park and in Cradle Mt National Park; turquoise berry (*Drymophila cyanocarpa*, Alstroemeriaceae, Liliales), somewhat resembling our *Luzuriaga*, was seen in rainforest at Corinna and Nelson Falls, with nice fruiting specimens (Plate 4B); and our last monocot example, water ribbon (*Triglochin procerum*, Juncaginaceae) was abundant along the edges of the Pieman River, and was also seen in the Tamar River.

Concluding remarks

This botanical trip, though cursory in some respects, revealed to us a good many features of Tasmanian plants. Here are a few that we became aware of:

- The colourful history of botanical exploration and colonial settlement, with associated plant names aplenty: Archer, Franklin, Gunn, Milligan, Labillardière, Riche.
- Strong links with New Zealand, e.g. *Histiopteris incisa*, *Pomaderris apetala*, *Leucopogon scoparium*, *Leptospermum scoparium*.
- Gondwanan plants: e.g. Podocarpaceae, *Atherosperma*, *Nothofagus*, *Tasmannia*, Restionaceae.

- High diversity of shrubs in several families: Ericaceae, Proteaceae, Asteraceae, Myrtaceae.
- Juxtaposition of fire-sensitive rainforest and fire-tolerant eucalypt forest, typified by the wet sclerophyll forests of the Huon district, with tall eucalypts emergent above a rainforest canopy.
- The extensive and unusual climax buttongrass and restiad sedgeland, on impoverished, poorly-drained sites subject to fires.
- Adaptation of the flora to co-habitation with grazing and browsing marsupials (e.g., the prickliness of *Coprosma*, unpalatability of *Acacia* to possums).

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Olive Davis Forest & Bird Reserve, Ranfurly Road, Alfriston 21 April 2012

Dave Wilson, Graham Falla and Mike Wilcox

Participants: *Enid & Paul Asquith, Colleen & Warren Brewer, Jan Butcher, Graham Falla (leader), Joe Grieg, Rosa Henderson, Peter Hutton, Margi Keys, Suman Pancha, Juliet Richmond, Val Tomlinson, Alison Wesley, Mike Wilcox, Tony Williams, Dave Wilson.*

This 8 ha reserve is owned by the Royal Forest and Bird Protection Society of NZ and cared for by the South Auckland branch. The property was formerly owned by Ged and Olive Davis, and was bequeathed to Forest and Bird after Olive died in 1979. The forest had been milled for kauri (*Agathis australis*), rimu (*Dacrydium cupressinum*) and totara (*Podocarpus totara*) in the past, and partially cleared, but it remains a valuable piece of bush. Natural regeneration has been enhanced by planting and pest control undertaken by Forest and Bird members.

Our entry point to the reserve was along what was formerly a horse and trap driveway. Just inside the gate, we were able to add the native grass, *Microlaena stipoides*, to the species list for the reserve (see Appendix). Only a short distance further on, the driveway was well on the way to being reclaimed by forest, aided by plantings done by Forest and Bird in the early 1980s. These consisted of trees grown from seed collected from within the reserve. It was interesting at this point to see the size

attained by a native passionfruit (*Passiflora tetrandra*) which had reached the canopy in the 30 or so years since the puriri (*Vitex lucens*) up which it had climbed had been planted. The abundance of *Passiflora* in the reserve was evident not only from the number of plants we saw during the day, but also in the quantity of fallen fruit on the forest floor in places. Other species planted in the same area included pukatea (*Laurelia novae-zelandiae*) and kauri. The latter had been grown from seed obtained from the only fertile tree to have survived milling in the reserve.

Soon we were walking under a canopy characterised in the reserve management plan as being of taraire (*Beilschmiedia tarairi*) and puriri, with the gully sides and gully floor having rimu, tawa (*Beilschmiedia tawa*), rewarewa (*Knightia excelsa*), kahikatea (*Dacrycarpus dacrydioides*), pukatea, ponga (*Cyathea dealbata*), mamaku (*Cyathea medullaris*) and wheki (*Dicksonia squarrosa*).

Where we rejoined the driveway, it was still something of an open thoroughfare. In this habitat we were able to begin in earnest to compile a list of naturalised exotic species for the reserve, and also recorded bidibidi (*Acaena novae-zelandiae*) and the fern *Deparia petersenii* for addition to the natives list. The driveway led to a notable feature of the reserve, the Olive Davis Cottage. Recently restored, the