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South Island trip to the Catlins, 11 – 17 January 2014

Maureen Young (editor)

Introduction

Alison Wesley

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Soma, Claire Stevens, Alison Wesley, Diana Whimp, Anthony Wright, Angelina Young, Maureen Young. Images were provided by Ewen Cameron (EC), Cheryl Taylor (CT), Joshua Salter (JS) and Vijay Soma (VS).

Twenty-nine members of the Auckland Botanical Society journeyed, mostly by plane, to Dunedin Airport, where they congregated together. They then divided among a collection of hired vehicles for the final journey to Balclutha, and then to Tautuku Outdoor Education Centre (Pl. 1A), which is inland from Tautuku Bay (Pl. 1B), c. 25 km south of Owaka, the main town of the Catlins region. The Catlins lies mostly within the Otago province.

The group arrived at Tautuku Outdoor Education Centre about 4 pm, allowing plenty of time to find rooms and beds to everyone's liking. The camp was expansive with more than enough beds, allowing us to spread out. There was a satisfactory kitchen and large hall/dining room where we met for meals, discussion, recreation and examined plant specimens (Fig. 1). A wonderful temporary botanical library was set up thanks to Cathy and Anthony. An



Fig. 1. The hall and/or dining room, Tautuku Outdoor Education Centre. Photo: EC, 16 Jan 2014.

enjoyable and informative addition to the plant specimen tables was a display of mosses, and even some liverworts, with labels, provided by Jessica Beever. Jessica has prepared for this issue a separate account of the mosses encountered on the trip (Beever 2014).

It was great to welcome the Southland leaders, Brian and Chris Rance, who arrived during dinner, and who had come to provide much needed expertise on the plants of this region. Brian provided many of the valuable species lists for each day's activities and led the group most days, returning to Invercargill late on Wednesday.

The weather was not kind to us, and we experienced only one warm day – fortunately this was the day that we spent most time in the open. Most days we experienced rain or showers, and cool temperatures.

At this time of year the forests seen from the road had a curious burgundy red colour due mainly to the masses of developing fruits on the kamahi (*Weinmannia racemosa*) canopy (Pl. 1A). Also intriguing to us North Islanders were the farmland hillsides covered with round red shrubs that appeared to be mostly horopito (*Pseudowintera colorata*) (Pl. 1C).

Day One: Nugget Point, Lake Wilkie & Tahakopa Estuary

Maureen Young

In drizzly rain we drove north past Owaka, then out to the coast at Nugget Point. A notable feature along the roadside was the plentiful toetoe, *Austroderia richardii*, with many drooping plumes.

From the car park at Nugget Point the well-benched, gravelled track led first through the divaricating shrubs *Coprosma propinqua* and *Melicactus* aff. *alpinus*, which were draped with the white-flowered *Calystegia tuguriorum*. Another liane growing there was *Parsonsia heterophylla*, the species identified by the few flowers present. The coprosma was commonly parasitised by the green mistletoe, *Ileostylus micranthus*. There was a view over the cliffs to a dozen or so nesting spoonbills (Fig. 2). One of the plants of interest in this area is *Olearia fragrantissima*, with a distribution from Banks Peninsula to Southland. A tall shrub with smallish leaves, it has a slight divarication at the branch endings. Adult and juvenile plants of *Pseudopanax ferox* were emerging above the shrubs. A bewildering array of asplenium ferns were sorted into *Asplenium lyallii*, *A. appendiculatum*, *A. obtusatum*, *A. polyodon* and *A. flabellifolium*. Bright splashes of purple were the frilled flowers of poroporo, *Solanum laciniatum*. The coastal hebe, *H. ellipticum*, was plentiful and flowering well in places (Figs. 3 & 4).



Fig. 2. Spoonbills were nesting on a shrubby taupata ledge on a rock stack, near Nugget Point. Photo: JS, 12 Jan 2014.



Fig. 3. *Hebe ellipticum*, on steep rockface beside track to Nugget Point. Photo: JS, 12 Jan 2014.



Fig. 4. *Hebe ellipticum* flowers, relishing the rain on the track to Nugget Point. Photo: JS, 12 Jan 2014.

As the lighthouse at the end of the point was approached, the wind-blasted vegetation on the steep slopes was interspersed with abundant native linen flax, *Linum monogynum*, showing the large white flowers (c.25 mm diam.) and seed heads of the species; a southern coastal endemic, *Anisotome lyallii*, with large shiny leaves and "carrot" flowers; the Catlins endemic coastal daisy, *Celmisia lindsayi*, also in flower. *Lepidium desvauxii*, a bushy



Fig. 5. Nugget Point lighthouse, and the Pinnacles, through a veil of rain. Photo: JS, 12 Jan 2014.

peppergrass from Australia (and maybe native to New Zealand), with an almost divaricating, open branching habit and triangular denticles on the leaf margins, was new to most of us.

From the viewing platform at the lighthouse could be seen several little islets – the Pinnacles (Fig. 5). These were composed of sedimentary rocks of Jurassic-aged hard sandstone that had been tilted through 90°. Bull kelp (*Durvillaea* sp.) was surging between the rock slabs, and several fur seals were surfing on the currents. At the base of the platform grew the nettle, *Urtica ferox*. By this time the rain was unpleasantly heavy, so the day's programme was altered, and a withdrawal to the lodge was undertaken.

John Millett

Later in the afternoon the sun broke through to warm us and gladden the eye, on this trip a situation as rare as spotting a mohua! We plunged off SH 1 just south of our camp into the mature forest of the Lake Wilkie walk (Fig. 6). There were towering, flowering kamahi, some goblin-like with age, others with boles large and straight enough to make me wonder how they would saw and what the timber would be like (we later learned that McLean



Fig. 6. Lake Wilkie, near Tautuku Bay. Photo: CT, 12 Jan 2014.

of the nearby Falls, turned the wood into violins). Otherwise rimu (*Dacrydium cupressinum*), miro (*Prumnopitys ferruginea*) and matai (*P. taxifolia*) co-dominated, while southern rata (*Metrosideros umbellata*) decorated the steeper, drier, more open edges of the lake, with some trees still in flower.

The understorey contained luxurious, rampant *Coprosma foetidissima*, and *Griselinia littoralis* with its broad, glossy leaves also took up a lot of room. Stout *Dicksonia fibrosa* with their "frilly frocks" stood sentinel over large crown ferns (*Blechnum discolor*), accompanied by *Cyathea smithii* with dead midribs.

Those muddling, multi-fingered leafy shrubs continued to tease our memories for their Latin names. Three fingers = *Pseudopanax colensoi* var. *ternatus*; five fingers = *P. arboreus*; seven fingers = *Schefflera digitata*. Wineberry (*Aristotelia serrata*) was abundant.

Descending to lake level a board-walk enabled us to botanise a mossy, shrubby swamp filled with small-leaved coprosmas (Fig. 7). Growing in the sphagnum moss were orchids with lapis lazuli-coloured flowers, *Thelymitra cyanea*. A microscopic dwarf mistletoe, *Korthalsella salicornioides*, growing on manuka (*Leptospermum scoparium*) was pointed out to us by Brian. The tangled, infinitely variable juvenile form of pokaka (*Elaeocarpus hookerianus*) was noted, as were both *Raukaua edgerleyi* and *R. simplex*. The perching orchid, *Winika cunninghamii*, in snowy flower, was seen high up on a tall rimu.

The Tahakopa Estuary boardwalk was accessed via the SH 1 Fleming Bridge, from which we were able to observe with ease the amazingly variable leaf forms of the juvenile ribbonwood, *Plagianthus regius*. Then we turned up an old mill road, conveniently marked for posterity with signs depicting the site of the mill and its workers' housing according to their tasks, e.g. the "tailer-out's" house of four rooms. Two species of astelia grew side by side – *Astelia fragrans* with a



Fig. 7. Board-walk through vegetation at the margin of Lake Wilkie. Photo: CT, 12 Jan 2014.



Plate 1A. Tautuku Outdoor Education Centre, surrounded by lowland forest. Photo: JS, 17 Jan 2014.



Plate 1B. Tautuku Bay, looking SW from viewpoint on the highway. Photo: CT, 11 Jan 2014.



Plate 1C. Wind-shaped trees and shrubs of farmland along highway north of Tautuku Bay. Photo: JS, 13 Jan 2014.



Plate 1D. Naturalised *Tropaeolum speciosum*, immature fruit. Photo: EC, Papatowai, 14 Jan 2014.



Plate 1E. *Peraxilla colensoi*, at eye-level on a road-side silver beech, lower reaches of Catlins River. Photo: JS, 13 Jan 2014.



Plate 1F. The first wire suspension bridge over the swollen brown river, on the Catlins River Walk. Photo: JS, 13 Jan 2014.



Plate 2A. New red fronds on a *Leptopteris superba*, Catlins River Walk. Photo: JS, 13 Jan 2014.



Plate 2B. Mixed podocarp forest on waterlogged back dunes, Old Possumers Track. Photo: VS, 14 Jan 2014.



Plate 2C. *Donatia novae-zealandiae* cushion, with *Drosera binata*, and much much more, at Ray Waghorn's property, Waituna. Photo: JS, 15 Jan 2014.



Plate 2D. *Prasophyllum colensoi*, 100 - 150mm tall, Ray Waghorn's property. Photo: JS, 15 Jan 2014.



Plate 2E. *Gunnera prorepens* in fruit, Ray Waghorn's property. Photo: JS, 15 Jan 2014.



Plate 2F. A yellowhead, high in a silver beech tree, Catlins River Walk. Photo: JS, 13 Jan 2014.

strong, outstanding nerve on either side of the abaxial midrib, and *A. nervosa* without this feature. The dark and sinister orchid, *Gastrodia minor*, was growing in the bare road gutter, and was much photographed.

The estuary was mainly oioi (*Apodasmia similis*) with salt-marsh ribbonwood (*Plagianthus divaricata*) margins. At the end of the walkway the tidal channel was emphasised by the large and smelly carcass of a sea lion, the odour of which left *Coprosma foetidissima* for dead.

On the way back I noticed weeds introduced by milling. These included planted sycamore (*Acer pseudoplatanus*), Himalayan honeysuckle (*Leycesteria formosa*), Chilean flame creeper (*Tropaeolum speciosum*) (Pl. 1D) and *Alstroemeria aurea*, which, with its large glossy, golden trumpets striped with red, was considered pretty enough to be chosen as a bouquet for Cheryl at that evening's re-enactment to celebrate Ewen and Cheryl's 30th wedding anniversary (Fig. 8).

Day Two: Catlins River Walk

Eila Lawton

The Catlin's River walk was marked by diversity: of the weather – everything from hail to lunch in the sun; of the plants in the lush rainforest reserve; of the fungi – brilliantly red *Amanita muscari*, chocolate buttons, blue pouches, yellow, pink-----; a seemingly endless variety of mosses, liverworts and lichens.

The morning started with roadside stops for hugely impressive growths of mistletoes. *Peraxilla colensoi* was in brilliant crimson flower growing on silver beech (*Lophozonia menziesii*) at the first stop (Pl. 1E). Also growing there were *Blechnum vulcanicum*, *B. procerum* and little gardens of the daisy *Lagenophora strangulata*. The second roadside stop was to see the white mistletoe, *Tupeia antarctica* (Fig.9), growing in profusion on both *Plagianthus regius* and *Sophora microphylla*.

Then it was on to the Catlins River Walk, waiting out a hailstorm before heading along the river, under Douglas fir (*Pseudotsuga menziesii*) to start with. The first challenge for some was contending with the wire swing bridge across a brown and swollen river (Pl. 1F & Fig. 10). Faster walkers headed off for the tussock field while the rest of us botanised more slowly. Many were suborned by the chance of seeing mohua (yellowhead), and lucky Claire also spotted a karearea (NZ falcon). Tomtits abounded.

Of the several species of orchid present, the most common was *Simpliglottis cornuta* (Fig. 11), and several spikes of the saprophytic *Gastrodia cunninghamii* (Fig. 12) were spied, both species in late flower.



Fig. 8. Cheryl and Ewen, bemused by the surprise 30th wedding anniversary 're-enactment'. Geoff officiated, and Maureen, Anthony, John and Claire were co-conspirators. Photo: JS, 12 Jan 2014.



Fig. 9. Tupeia antarctica on ribbonwood in roadside farmland, Owaka Valley. Photo: JS, 13 Jan 2014.



Fig. 10. Cheryl standing in the middle of the first wire suspension bridge over the Catlins River. Photo: JS, 13 Jan 2014.

Ferns abounded. The filmy ferns were pleased to sort out *Hymenophyllum bivalve* and *H. villosum*, with *H. multifidum* covering vast areas of the forest floor (Fig. 13). The common grammitid was *Notogrammitis billardierei*, but *N. angustifolia* subsp. *nothofageti* was occasionally present.



Fig. 11. *Simpliglottis cornuta*, Catlins River Walk. Photo: JS, 13 Jan 2014.



Fig. 12. *Gastrodia cunninghamii*, Catlins River Walk. Photo: JS, 13 Jan 2014.



Fig. 13. In some areas the forest floor was dominated by *Hymenophyllum multifidum*, Catlins River Walk. Photo: JS, 13 Jan 2014.



Fig. 14. *Melicytus flexuosus*, attenuated form in shade, Catlins River Walk. Photo: JS, 13 Jan 2014.

Hypolepis millefolium and *H. rufobarbata* were there, and the trunkless *Cyathea colensoi* was distinguished from *C. smithii* by the dull upper surface of the fronds. *Fuchsia excorticata* and *F. perscandens* were present and had hybridised to produce *F. ×colensoi*. A couple of chewed off stumps with puzzling leaves turned out to be another hybrid – *Raukaua anomalus* × *R. simplex*. A third hybrid was *Aristolelia fruticosa* × *A. serrata*.

Lisa Clapperton and Angelina Young

We continued to follow the river downstream along the flood terrace, through silver beech forest with a very light under storey of lancewood (*Pseudopanax crassifolius*), three finger, and small leaved coprosma species including *C. dumosa* (*C. tayloriae*), *C. rhamnoides* and *C. rotundifolia*. These cool, moist, humid conditions favoured the Prince of Wales feather (*Leptopteris superba*) (Pl.2A), with little brother 'Prince Andrew' (*L. hymenophylloides*) filling a more subservient role. Other forest floor dwellers included the ferns *Blechnum discolor*, *B. chambersii*, *B. fluviatile* and *Leptolepia novae-zealandiae*. The hairy *Nertera villosa* was common along the track.

We crossed a number of small streams feeding into the Catlins River and had lunch at the tussock flat in a grassy clearing by the Wallis Stream dominated by brown top (*Agrostis capillaris*) with *Celmisia gracilentia* scattered liberally throughout. Hiding amongst this were *Chaerophyllum ramosum*, *Geranium microphyllum* and *Blechnum penna-marina*.

Of particular interest here was *Melicytus flexuosus* in fruit, growing into a 1.5-2 m high shrub in its more typical, reduced-leaved state, in contrast to the very leafy attenuated form seen earlier growing in shade under the beech trees (Fig. 14). Also of note were *Carmichaelia petriei* and *Olearia bullata*.

Day Three: Papatowai – Tahakopa Bay Loop Walk

Jenni Shanks and Viv Paterson

Tahakopa Estuary salt marsh turf: We first botanised the salt marsh turfs on the true left bank of the estuary above the road bridge (Fig. 15). Here we found *Carex litorosa* ("Declining"), *Selliera radicans* and *Samolus repens* (both flowering), *Suaeda novae-zealandiae* and *Sarcocornia quinqueflora* forming a wonderful turf on the silty substrate (Fig. 16). We also found the threatened *Lachnagrostis tenuis* ("Data Deficient") with *Schoenus concinnus*, *Poa cita* and *Plagianthus divaricatus* fringing the turf on slightly higher ground. The mosaic of turf plants made a very pretty sight, their delicate forms contrasting with a huge stranded bull kelp (*Durvillaea poha*) (Fig. 17).



Fig. 15. Salt marsh turfs of the Tahakopa Estuary, at low tide. The ranges of the Catlins State Forest Park in the distance. Photo: CT, 14 Jan 2014.



Fig. 16. *Selliera radicans* and *Sarcocornia quinqueflora* in a pool of rainwater on salt marsh turf at Tahakopa Estuary. Photo: JS, 14 Jan 2014.



Fig. 17. Bull kelp (*Durvillaea poha*) stranded in the Tahakopa Estuary. The broad flattened blades distinguish this species from *D. antarctica*. This broken specimen is possibly only half its full length; Ewen and Diana for scale. Photo: JS, 14 Jan 2014.



Fig. 18. The Old Coach Road ran along the north side of the Tahakopa Estuary; Old Possumers Track traversed the mixed podocarp-broadleaf swamp forest to emerge at Tahakopa Bay. Photo: JS, 14 Jan 2014.



Fig. 19. *Cyathea smithii* and crown ferns surrounding a tea-coloured pool in dune-swamp forest, Old Possumers Track. Photo: JS, 14 Jan 2014.



Fig. 20. Tahakopa Bay, looking east. Photographed walking backwards into the sand-blasting westerly gale. Photo: VS, 14 Jan 2014.

Old Possumers Track to Tahakopa Bay and Old Coach Road: We next did the 3 hour walk along the Old Possumers Track (Fig. 18), then back along the beach and the Old Coach Road to the bridge. This took us through beautiful diverse forest on old back dunes (Pl. 2B) with kahikatea (*Dacrycarpus dacrydioides*), silver beech and kamahi, rimu and matai. There were many fine specimens of *Dicksonia fibrosa* with their characteristic skirt of intact dead

fronds, *Raukawa simplex* with their fascinating juveniles, and lush areas of filmy ferns carpeting the ground and tree trunks, including large patches of *Hymenophyllum dilatatum*. There were lots of seedling rimu and kahikatea and a few juvenile matai with their tangled form. Many different species of fern were seen including *Leptopteris hymenophylloides*, large specimens of *Rumohra adiantiformis* and crown fern in abundance (Fig. 19).



Fig. 21. Large southern rata on the Papatowai side of the Tahakopa Estuary. Photo: EC, 14 Jan 2014.



Fig. 22. Maureen examining *Hymenophyllum minima* on a large southern rata trunk (see Fig. 21), Papatowai. Photo: EC, 14 Jan 2014.



Fig. 23. Dinner out on the deck at the Whistling Frog Café. Photo: CT, 14 Jan 2014.



Fig. 24. Cathy, Anthony and Alison in matching Bot Soc T-shirts, dressed for dinner at the Whistling Frog Café. Photo: CT, 14 Jan 2014.

Several forest pools covered in a green carpet of duckweed (*Lemna cf. disperma*) with mosses and ferns, appeared as magical places from another world (see p. 57 of this issue (Beever 2014)). In one of these wet hollows we found *Coprosma pedicellata* ("Declining") which has fruit on pedicels that hang down and which are violet when mature.

We came out of the forest onto the coastal dunes where we ate our lunch amongst the spinifex. After lunch we made our way along the beach (Fig. 20) back to the cars at the bridge, buffeted by a strong wind that threw sand in our faces and caused us to keep our heads down - quite a contrast to the stillness of the forest.

After a snack break we briefly explored the other side of the estuary. On this more sheltered shoreline, large southern rata overhung the water (Fig. 21), and here too filmy ferns like *Hymenophyllum minimum* were seen (Fig. 22).

The Whistling Frog was the location for our 'banquet' this evening (Figs. 23 & 24).

Day Four: The Chaslands, Curio Bay and Waituna areas

Anne Fraser and Jan Butcher

On Wednesday we were greeted with a fine and later sunny day. Even the wind was warm when we reached Waituna. Before we left our Lodge, a group photo was taken (Fig. 25), and farewells and formal thanks were given to Brian and Chris Rance as this was their last day with us. Their local knowledge and expertise greatly added to our enjoyment and knowledge on the trip.

Our first stop near the camp was to see the small uncommon succulent *Crassula ruamahanga* growing in a wet ditch beside the road, associated with *Juncus articulata*. By running a finger down the *Juncus* leaf one could feel the internal articulations.



Fig. 25. Group photo (everyone except Vijay, the photographer) at the Tautuku Outdoor Education Centre. Photo: VS, 15 Jan 2014.



Fig. 26. A grassy clearing with beehives at one end, surrounded by an interesting assortment of rare and unusual trees, Chaslands Scenic Reserve. Photo: JS, 15 Jan 2014.

We continued south – slowly – when a flock of sheep on the road caused a hold-up and plenty of advice for the driver if he could have heard us. The invasive *Tropaeolum speciosum* with bright red flowers was common on the roadside vegetation. Our next stop was in the Chaslands Scenic Reserve (Fig. 26). The area we saw was a small paddock of long grass which had *Celmisia gracilentia* (Fig. 27A) and a delicate white-flowered *Geranium* aff. *microphylla* (Fig. 27B) threading through it. On the edge of the paddock were some of the special plants - *Coprosma wallii*, (a threatened species) (Fig. 28), *Melicytus flexuosus* and *Olearia lineata* (Fig. 29) (both declining species), *Coprosma dumosa* with sessile fruits and *Neomyrtus pedunculata* in flower. The stems of *Clematis marata* with some seed pods were twined amongst the lower shrubs. The three similar species of *Aristolelia fruticosa*, *Raukawa anomalous* and *Myrsine divaricata* caused the usual confusion. *Plagianthus regius* was the dominant tree along the stream and large clumps of the fern *Polystichum vestitum* with its unfurling furry orange-brown new growth was plentiful in amongst the shrubs and trees. Also present were several plants of the weedy broom, *Cytisus scoparius*, unfortunately loaded with seed pods, but kereru were seen eating the tender young tips of the leaves.

As we drove south through the Chasland Scenic Reserve the forest extended from the road to the skyline, with *Weinmannia racemosa* dominating the high ground (Fig. 30).

Curio Bay is regarded as one of the world's treasures, the most extensive and least disturbed example of a fossilized Jurassic forest. The Curio Bay fossil forest is preserved in the Murihiku Terrane, one of the three Terranes of Carboniferous – Jurassic age (310 – 165 ma) known collectively as the Central Arc Terranes (Graham 2011). Related to ancient volcanic arcs, the marine sandstones derived from them formed long narrow basins and are considered to be over 12 km thick. The Murihiku Terrane can be traced the full length of New Zealand (Campbell & Hutching 2007). During Jurassic time, Zealandia



Fig. 27. A: *Celmisia gracilentia* and B: *Geranium* aff. *microphylla*, in long grass, Chaslands Scenic Reserve. Photos: JS, 15 Jan 2014.



Fig. 28. *Coprosma wallii* at edge of clearing, Chaslands Scenic Reserve. Taking a thin slice from its grey bark will reveal a bright orange layer beneath. Photo: JS, 15 Jan 2014.



Fig. 29. *Olearia lineata* with upright branch tips, Chaslands Scenic Reserve. Photo: JS, 15 Jan 2014.



Fig. 30. Grey small-leaved trees in the foreground give way abruptly to kamahi forest behind, in Chaslands Scenic Reserve. Photo: JS, 15 Jan 2014.



Fig. 31. Curious Bot Soccers beside one of the fossil tree trunks, Curio Bay. Photo: EC, 15 Jan 2014.



Fig. 32. Stranded bull kelp (*Durvillaea antarctica*) with massive holdfast and long terete whip-like ends to its blades, Curio Bay. Fossil wood visible in foreground. Photo: JS, 15 Jan 2014.



Fig. 33. Lloyd Esler talking to our group, Waituna Lagoon. Photo: JS, 15 Jan 2014.



Fig. 34. Ray led the way over his ploughed field, leveling a 'road' for us. Photo: CT, 15 Jan 2014.

(the continent which underlies New Zealand) was close to the South Pole on the eastern margin of Gondwana. The climate was described as humid and moderately warm, the coastal plain supporting large trees and an understory of ferns and cycads which were overcome and silicified by volcanic ash. The trees included Araucarias and Podocarps (Graham 2011). Our view of these wonderful fossils was somewhat restricted as this site is also the home of the yellow-eyed penguin, so we could not wander far (Fig. 31), but some specimens showing wood-grain could be photographed. On the edge of the bay, huge bull kelp beds moved with the action of the waves against the rocky edge. A washed up specimen of *Durvillaea antarctica* was on the foreshore so we could marvel at the size of the holdfast (Fig. 32). Some nice coastal *Hebe elliptica* were present.

Leaving Curio Bay we reached Waituna and trekked along the flax-lined board walk and saw one bog pine, *Halocarpus bidwillii*, adjacent to it. Lunch was in a bird-hide with distant views of Stewart Island and the smelter chimney at Tiwai Point. Here we met Lloyd Esler (a son of Alan Esler), who outlined the history of the Waituna Lagoon and wetlands (Fig. 33). The site was the first one in New Zealand to be designated as a Ramsar Wetland of International Importance in 1976. With the addition of several sites the area now comprises 20,000 ha. The area is largely underlain by peat, quartz gravel and lignite; the sites contain native fish and numerous birds, and have a vegetation sequence of forest to estuary plant species. The peat bog is manuka-dominated and has been modified by fire.

After lunch we made a short drive to Ray Waghorn's property (to view a plant that normally grows in subalpine areas. Ray very kindly created an access road across a ploughed field just for us (Fig. 34). On a ridge 5 m asl is an area that Ray has left to regenerate, after the initial farm development in 1979 when the Government was subsidizing farmers to develop marginal land. Ray decided to fence off this area to protect a very tough cushion plant, *Donatia novae-zealandiae*, that now grows on the boggy peat (Fig. 35 & Pl. 2C). The area was a botanical delight, with beautiful flowering sun orchids, *Thelymitra cyanea* and *T. pulchella*, but we were unable to identify the *Pterostylis* plant that had finished flowering. Other delights were *Prasophyllum colensoi* (Pl. 2D), *Utricularia dichotoma*, *Drosera binata*, *D. spatulata*, *Oreostylidium subulatum* and *Ophioglossum coriaceum*. There were patches of *Gunnera prorepens* (Pl. 2E) and a species of the moss *Dicranoloma* adding to the mix (see p. 55 this issue (Beever 2014)). Today, the threat to the *Donatia* is from the invasion of manuka and wire rush, which will shade it out. Ways of control are being investigated.

We then drove on to Carran Creek, which flowed out into the Estuary. Once again we had some new delights: *Urtica linearifolia* (Fig. 36), *Potentilla anserinoides* (Fig. 37), *Galium perpusillum* growing on the edge of the foreshore, and the grass, *Deschampsia caespitosa*. Along the beach front was *Spergularia marina* amongst abundant *Cotula coronopifolia*, *Atriplex prostrata*, *Mimulus repens* with mauve flowers and *Chenopodium ambiguum*. Further up the beach behind the tide line was *Spergularia rubra*.

After a wonderful day, there was no time left to go out to the beach so, after a final farewell to Brian and Chris Rance (Fig. 38) and a stop at the ice cream shop, we headed home.

Day Five: Cathedral Caves & McLean Falls

Bev and Geoff Davidson

Weather as normal: raining and windy. Today had two parts, firstly down to the coast at Cathedral Cove and then inland to the McLean Falls.

The access to the tidal Cathedral Caves is across land managed by the Tautuku Trust and they operate a system that restricts access to periods within 2 hours either side of low tide. This meant that our visit was timed for 9 a.m. to give us at least a couple of hours to explore the caves. Arriving at the car park, we paid our admission fee and were immediately rewarded by the sight of a *Metrosideros diffusa* in full flower. On the winding track down to the beach were some enormous kamahi and southern rata trunks. The trees were not so tall but definitely obese. The *Cyathea smithii* were resplendent in their piupiu and as we approached the beach we were greeted by a haka being performed by a sea-lion. It was indeed a rather enraged sea-lion which left no doubt that we were the trespassers (Fig. 39). Having successfully circumvented the beast we ambled along to the Cathedral and enjoyed the botany. *Blechnum blechnoides* was mixed with *Crassula moschata* while *Carex appressa* and *Carex trifida* tussled for supremacy. The cave was more of a tunnel following the line of weakest strata where the waves had eroded it from two directions to meet some 50 m into the hill (Figs. 40 & 41). The strata showed the deposition that occurred so many millennia ago, including seams rich in coal. As the weather deteriorated we hastily returned up the track, convinced we were indeed within a rainforest.

Back in the vehicles, we drove past the Whistling Frog café to the McLean Falls. These were reached along a pleasant track which gained altitude slowly for the 20 minutes it took to walk there. The track first passed through grey scrub of several genera all looking quite identical. The word was out that the elusive *Pittosporum obcordatum* was lurking on the left about a third of the way in. Of course we had no idea where the one third mark was until we had first



Fig. 35. Ray Waghorn showed us the *Donatia* cushions, some with perspex enclosures. The invading manuka needs constant weeding for low herb species to survive. Photo: JS. 15 Jan 2014.



Fig. 36. *Urtica linearifolia* scrambling in a restiad tussock, Waituna Lagoon. Photo: JS, 15 Jan 2014.



Fig. 37. *Potentilla anseroides*, on shingle at the margin of Waituna Lagoon. Photo: JS, 15 Jan 2014.



Fig. 38. Brian and Chris Rance, Waituna Lagoon. Photo: JS, 15 Jan 2014.



Fig. 39. The sea-lion had the beach to itself, until we appeared unexpectedly. When it showed its teeth the fear was mutual. Cathedral Caves beach. Photo: EC, 16 Jan 2014.



Fig. 40. Ann at the western entrance to Cathedral Cave. Photo: JS, 16 Jan 2014.



Fig. 41. John, Geoff and Anthony at the eastern entrance to Cathedral Cave. Chaslands Mistake headland in the distance. Photo: JS, 16 Jan 2014.

completed the whole track, which lead us through mature forest of *Weinmannia*, giant *Fuchsia* (Fig. 42), *Olearia* and podocarps. Once there the plunging waters of the Tautuku River, descending from the MacLennan Range, cascaded 22 m (Fig. 43). The dubious colour of the water belied its purity. We chose not to add it to our time-honoured tradition of gin and tonic. To the ringing cry of "Vivat Regina" we fulfilled our obligation to Queen and Country and Anthony Wright, quartermaster for the trip and provider of the excellent G&T (Fig. 44).

The return allowed us to be more attentive and note the differences between the alternate leaved *Myrsine divaricata* and *Raukaua anomalus*. The many coprosma, of course, all had opposite leaves, so they could be eliminated in our search for the elusive alternate-leaved *Pittosporum* (Fig. 45). It took the young eyes of 'Auntie Anne' to first see the subtle heart-shaped leaf of the first *Pittosporum obcordatum* (Fig. 46). Notable ferns along the track were *Sticherus cunninghamii*, *Leptopteris superba* and *Blechnum colensoi*. I selected a frond of each and dutifully delivered them to the Whistling Frog where the owner was keen to know what the renowned rare fern looked like. The choice of three was overwhelming for him and I had to explain their significance in some detail. In exchange I parlayed half a dozen chocolate fish for our awards ceremony that night. The little cocoa-coated sprats are another Bot Soc tradition and the supreme award for the most meritorious Bot Soccer of the Camp was given jointly to the youngest, Dhahara Ranatunga, and the oldest, John Rowe. Good manners prevent me from revealing the age of either of them.

Some birds of the Catlins

Stella Rowe

The Catlins Conservation Area is one of the few remaining strongholds of the threatened yellowhead, *Mohoua ocreocephala*, an endemic South Island species. On our walk down the Catlins River, many members were lucky enough to spot these charming



Fig. 42. Huge *Fuchsia excorticata* trees overhanging the path to MacLean Falls. Photo: EC, 16 Jan 2014.



Fig. 43. MacLean Falls on the Tautuku River. A fitting place for a celebratory G&T. Photo: JS, 16 Jan 2014.

little bright golden "bush canaries". They were busily foraging in small groups high in the forest canopy (Pl. 2F), often hanging upside-down, to find the invertebrates that are their main food. Smaller and less easy to see in their grey and brown plumage was another South Island endemic, brown creeper, *Mohoua novaeseelandiae*. The varied calls of small parties could be heard on all our bush walks, as well as around the Lodge.

Another bird unfamiliar to many was the introduced common redpoll, *Carduelis flammea*. These inconspicuous little birds, smaller than a sparrow, were present everywhere. Even in the bush we could hear their rattly buzzing calls as they flew overhead. Lloyd Esler, in his talk to us on the birds of the Catlins, called them the commonest birds in the south.

We were aware that the 6 to 8 pairs of yellow-eyed penguins, *Megadyptes antipodes*, were breeding in the flax and vegetation above the fossil forest at Curio Bay, but no-one was fortunate enough to see any during our brief visit.

The variety of habitats visited gave us a bird count of 45 species: black swan; paradise shelduck; mallard; pelagic birds seen from Nugget Point were species of smaller albatross, giant petrel and shearwater; Stewart Island shag, both pied and bronze phases; spotted shag; white-faced heron; royal spoonbill – small groups seen in most estuaries - There was a small breeding colony at Nugget Point on one of the small stacks; swamp harrier; N.Z. falcon; eastern bar-tailed godwit; variable oystercatcher; South Island pied oystercatcher; pied



Fig. 44. Gin & tonics all round, courtesy of Anthony, complete with slices of lime. We sipped (or rather, downed) them on the rocks at MacLean Falls. Photo: EC, 16 Jan 2014.



Fig. 45. Keen interest in a *Pittosporum obcordatum* that Ann found on the return from the MacLean Falls. Photo: JS, 16 Jan 2014.



Fig. 46. *Pittosporum obcordatum* leaves arise from minute side branches along divaricating stems. MacLean Falls. Photo: JS, 16 Jan 2014.

stilt; banded dotterel; spur-winged plover; southern black-backed gull; red-billed gull; Caspian tern; white-fronted tern; N.Z. pigeon; morepork; grey warbler; bellbird; tui; yellowhead; brown creeper; Australian magpie; South Island fantail; South Island tomtit; skylark; South Island fernbird; silvereye; welcome swallow; blackbird; song thrush; house

sparrow; dunno; chaffinch; greenfinch; goldfinch; redpoll; yellowhammer.

Thank you to everyone who contributed species to this record. In particular to John Millett, who spotted the Caspian tern at Tahakopa Bay, Peter Hutton, who heard morepork from the Lodge annex and Claire Stevens who upstaged us all by recording N.Z. falcon in the Catlins Valley. Last, but not least, my thanks to Peter Maddison, whose species list, when we compared notes, made this record more complete.

Acknowledgements

Our gratitude to Life Members and South Island friends, Cathy Jones and Anthony Wright, for their part in making our biennial trip run so smoothly. The local knowledge of Southlanders Brian and Chris Rance and Lloyd Esler added greatly to our enjoyment and to the learning experience. Our

thanks to Alan Dewe, the warden of Tautuku Outdoor Education Centre for a well-run and welcoming place to stay. Joshua Salter selected and organised the figures and captions.



Sad passing

Eila Lawton died on 21 May 2014. She had been seriously ill for several months and yet still managed to contribute to this article. We have fond memories of her on Bot Soc camps, and we greatly appreciated her knowledge of birds.

Our sympathy to Peter Maddison.

Eila at our 'banquet' at the Whistling Frog Cafe, the Catlins. Photo: JS, 14 Jan 2014.

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A Bryologist's take on the Auckland Botanical Society trip to the Catlins, 11 – 17 January 2014

Jessica E. Beever

Introduction

This trip to the Catlins and nearby areas, in both Otago and Southland, gave an opportunity to investigate mosses in a wide variety of habitats in southern latitudes of mainland New Zealand. For details of participants, itinerary, and accounts of the vascular plants, together with geological and ornithological high-lights, see the adjacent article (Young (ed.) 2014).

Nugget Point Lighthouse

Our first outing, to Nugget Point, did reveal a few mosses, in spite of weather that made glasses and hand lens quickly inoperable. Three species of *Bryum* were spotted: *Bryum campylotheceum*, a hardy coastal species, and *B. billardierei*, both on the track edge. *Bryum dichotomum*, with diagnostic leafy bulbils, was found in the old quarry from which rock was taken for the light-house construction. Here

were also found two exotic mosses, *Brachythecium albicans*, and *Eurhynchium praelongum*. And to rest the eyes (but still stay with the non-vascular flora) we could watch the amazingly resilient bull kelp (*Durvillaea* sp.) on the rocky shore far below, being sucked relentlessly in and out with the waves (Fig. 1).

Roadsides, car-parks, picnic grounds, and other high-light habitats

Roadside habitats provided plenty of interest in the way of light-demanding species. Here on soil were found *Bryum dichotomum*, *Ceratodon purpureus*, *Campylopus ?introflexus*, *Eurhynchium praelongum*, *Hypnum cupressiforme*, and *Polytrichum juniperinum*. In wetter sites *Breutelia pendula*, *Philonotis tenuis*, and the introduced *Calliergonella cuspidata* occurred. At our roadside stop to see the "Naturally Uncommon" vascular plant, *Crassula*