

Pseudopanax lessonii
Prunella vulgaris *
Ranunculus repens *
Senecio bipinnatisectus *
Sonchus oleraceus *
Stachys sylvatica *
Syzygium smithii *
Taraxacum officinale *
Tecomaria capensis *
Ulex europaeus *
Vicia sativa *

Monocotyledons

Allium triquetrum *
Carex dissita
Carex divulsa *
Carex ? lambertiana
Carex ? ochrosaccus

Collospermum hastatum
Cordyline australis
Cortaderia sp.*
Crocasmia ×crocosmiiflora *
Cyperus eragrostis *
Earina mucronata
Ehrharta erecta *
Freycinetia banksii
Hedychium gardnerianum *
Juncus tenuis *
Microlaena avenacea
Oplismenus hirtellus
Rhopalostylis sapida
Ripogonum scandens
Tradescantia fluminensis *
Zantedeschia aethiopica *

A Preliminary Account of the Lichens of Tuhua (Mayor Island)

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Introduction

Tuhua (Mayor Island), despite its large size (1277 ha), ease of access and long history of botanical investigation (see summary in Wilcox et al. 2012a) does not seem to have been seriously investigated by a lichenologist. Prior to the January 2012 Auckland Botanical Society Anniversary Weekend field trip there (see Wilcox et al. 2012a) we undertook an electronic survey of the three main New Zealand Herbaria (AK, CHR, WELT) to determine what lichens had been collected from there. Even when appreciating that not all of these herbaria's lichen collections have been electronically data based, only five lichen collections (representing four taxa, all held at AK, and all collected by A.E. Wright) were located.¹ Further, as Tuhua (Mayor Island) is not mentioned as a lichen locality in Galloway (1985, 2007); it seems "safe" for us to assume that the lichen mycobiota of Tuhua (Mayor Island) was, prior to our 2012 investigation, virtually unknown.

¹ For the record the four lichens collected by Wright were an undetermined species of *Bacidia*, *Cladonia floerkeana*, *Pseudocyphellaria dissimilis* and *Ramalina celastri* (two collections). With the possible exception of the *Bacidia*, the rest are all common species typical of northern New Zealand coastal forest.

This article reports on the lichens we collected during two and half day's field work undertaken between the 27th and 30th January 2012. During that time we collected 170 packets of lichens. We also stress that our survey was not comprehensive, particularly as one of us (PdL) was also tasked by the Department of Conservation with surveying the island's bryophyte flora (de Lange et al. 2012a), while assisting with observations on the island's vascular flora and in collecting seaweeds as well (see Wilcox et al. 2012a; Wilcox et al. 2012b). Therefore, we tended to collect that which was "big and obvious", genera that we knew, or what looked to us "interesting".

Results

At the time of writing (17 September 2012) we recognise for Tuhua (Mayor Island) c.103 lichen taxa (see Appendix - noting that identifications of a few other "difficult" specimens are still pending) from 25 fungal families. Although our collections are in no way representative of the lichen diversity on the island the dominant families we collected were (in decreasing order): Parmeliaceae (28 taxa), Lobariaceae (17 taxa), Physciaceae (11 taxa) and Pannariaceae (eight taxa) which more or less reflects established patterns of lichen diversity in New Zealand (de Lange et al. 2012b). The two

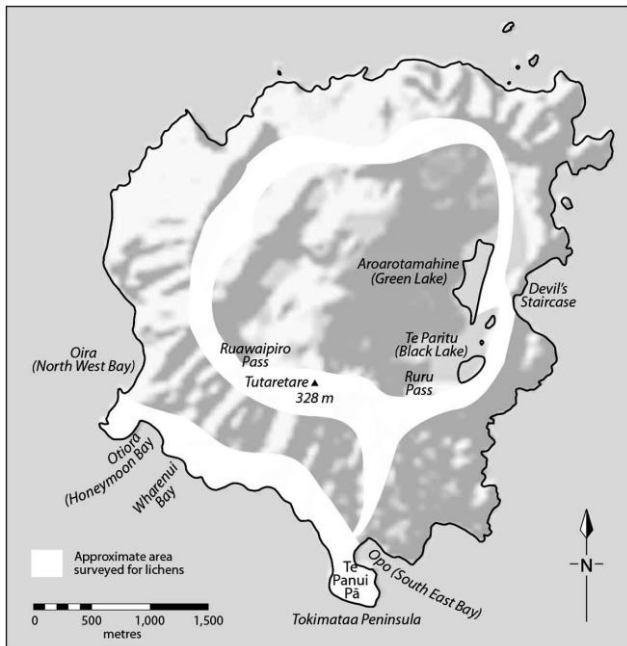


Fig. 1. Map of Tuhua (Mayor Island) showing generalised locations of areas surveyed for lichens for this article. Map by J.R. Rolfe.

under-represented families, Cladoniaceae and Lecanoraceae, either reflecting our deliberate decision not to collect them (see comments below) or that we somehow overlooked them.

Further, based on a recent first attempt at providing a list of the conservation status of the New Zealand lichen mycobiota (de Lange et al. 2012b), from our listing for Tuhua (Mayor Island) we collected 18 lichens assessed as 'At Risk / Declining', 'At Risk / Naturally Uncommon' or 'Data Deficient' by de Lange et al. (2012) (Table 1). One lichen the blue-green *Pseudocyphellaria punctillaris*, is a palaeotropical species (Galloway 1994) previously recorded from the New Zealand Botanical Region from the Kermadec Islands only (see de Lange et al. 2012; de Lange & Galloway *in press*). We also collected one lichenicolous fungus, *Dactylospora lobariella*, which in this instance was commonly seen parasitising the thallus of *Pseudocyphellaria coriacea*, which it seems is its favoured host in New Zealand (Galloway 2007).

The full listing of lichens we collected and lodged in the Auckland Museum (AK) and Unitec Institute of Technology (UNITEC) herbaria is given in the Appendix. Therein taxa are arranged alphabetically, and because the nomenclature of New Zealand lichens is still in a constant state of change (see comments in de Lange 2012b) we provide the authorities for all the lichen names used there as these may differ from those currently available in Galloway (2007), de Lange et al. (2012b) and on Ngā Tipu o Aotearoa – New Zealand Plants Database (<http://nzflora.landcareresearch.co.nz/> accessed 17 September 2012).

Lichen Habitats and Associations

Tuhua (Mayor Island) (Fig. 1) is a peralkaline volcano with a long history of human disturbance (Wilcox et al. 2012a). Possibly as a consequence of this geological history and long period of human disturbance, the island is now dominated by pohutukawa (*Metrosideros excelsa*) forest. Indeed Tuhua (Mayor Island) is probably New Zealand's largest example of this type of forest. However, in places, such as along ridge lines, in the caldera, or in the large defile leading to Opuhi Spring this forest is broken by emergent rewarewa (*Knightia excelsa*), dense stands of mangeao (*Litsea calicaris*), and also, in the most exposed places, dense stands of manuka (*Kunzea aff. ericoides* (b) of de Lange et al. (2010)) forest (though this is now mostly senescent). Other canopy species are present, though generally less frequent. For more detailed information on the forest composition, dominant vascular plants, uncommon and /or threatened vascular plants and other aspects of the island's flora see Wilcox (et al. 2012a).

As our time was limited, lichens were collected opportunistically, though we did try to collect from a range of altitudinal zones and distinct habitat types. Collections from the coast were made mostly from Opo (South-East) Bay (Fig. 1), though a few specimens were collected from the cliff faces and

Table 1. At Risk and Data Deficient lichens recorded from Tuhua (Mayor Island). Threat listings follow de Lange et al. (2012). # = Lichenicolous fungus

Declining (1)
<i>Teloschistes flavicans</i>
Naturally Uncommon (4)
<i>Pseudocyphellaria poculifera</i>
<i>P. punctillaris</i>
<i>Teloschistes sieberianus</i>
<i>Usnea nidifica</i>
Data Deficient (13)
<i>Coccocarpia pellita</i>
<i>Dactylospora lobariella</i>
<i>Dirinaria picta</i>
<i>Hypotrachyna costaricensis</i>
<i>H. rockii</i>
<i>Leprocaulon arbuscula</i>
<i>Leptogium coralloideum</i>
<i>L. ?propaguliferum</i>
<i>Megaloblastenia flavidoatra</i>
<i>Megalospora knightii</i>
<i>Parmelinopsis horrescens</i>
<i>Parmotrema grayanum</i>
<i>Physcia tribacoides</i>

talus slopes near the lighthouse at the end of Tokimataa Peninsula (Fig. 1), and on rocks at the mouth of a small, exposed gully overlooking Wharenuui Bay (Fig. 1). All of these areas had a macro-lichen cover dominated by saxicolous genera, especially genera within the Parmeliaceae, most notably *Xanthoparmelia* (e.g., *X. furcata*, *X. pulla* and *X. scabrosa*), *Parmotrema* (*P. cetratum*, *P. crinitum* and *P. perlatum*). *Physcia* and *Heterodermia* spp. (*H. obscurata* and *H. speciosa*) were also common while in places the rock was richly ornamented with dark red-orange *Jackelisia ligulata* crusts and less frequently yellow-green *Rhizocarpon geographicum*. Tufts of the white, coralloid *Stereocaulon ramulosum* were also seen here, though for some reason underdeveloped (indeed we did not see any good examples of this usually common species during our survey). Robust forms of *Ramalina celastri* were also common on the exposed cliff faces above Wharenuui Bay, where they commonly grew with filamentous, finely tufted *R. australiensis*. Other crusts were frequent but, lacking time and the necessary tools, we were unable to collect these. At Opo Bay, just above the high tide mark on the boulders at the southern end of the bay we noted a similar assemblage but added to these collections of *Hypotrachyna imbricatula*, *H. rockii* and *Physcia poncinsii*. Here a few boulders within the splash zone sported slate grey to dark blue-black patches of the maritime lichen *Lichina pygmaea*, a species often found growing in sites partially immersed at high tide. In another habitat altogether, a series of eroding cliff faces on the Tokimataa Peninsula near the lighthouse; we found a range of forms of *Cladia aggregata* growing admixed with the liverwort *Chiloscyphus semiteres* var. *semiteres* on the tops of eroding cliff faces.

In the dense pohutukawa forest along the track from Opo to Oira (North-West Bay) (Fig. 1), especially on the shaded trunks and boles of pohutukawa, lichens in Parmeliaceae were again common, though in a few places lichens of the Megalosporaceae were noted, including the beautiful yellow green *Megalospora knightii* and quite commonly *Megaloblastenia flavidoatra*. *Coenogonium implexum* was also conspicuous in this forest type, especially on the trunks of pohutukawa and rewarewa, where its greenish felted thallus, usually bearing bright yellow apothecia, were frequently seen threaded through the liverwort *Thysananthus anguiformis*. On tree falls and branches we also found a few examples of *Hypogymnia subphysodes* var. *subphysodes* and *Pseudocyphellaria aurata* – the latter a photophilous species that didn't seem to be especially common on the island. A rotting pohutukawa log sported *Calicium lenticulare*. It is worth noting that lichens in the family Cladoniaceae were also common here and across the island but we did not collect these, as they are difficult to identify without access to chemicals and the ability to undertake thin layer

chromatography (TLC). A very common lichen in these areas, and also on the forested rock falls of the caldera, was *Porina exocha*. This is a scurfy greenish (sometimes orange-green) crustose species whose thallus when dry resembles lumpy porridge, and is also extremely brittle so it's rather difficult to collect good specimens without them shattering.

At Opo Bay campsite, the pohutukawa trees and sawn pohutukawa logs were densely invested in a wealth of lichens. Again the most commonly encountered species were those in the Parmeliaceae of which *Parmotrema reticulatum*, *P. austrocetratum* and *P. cetratum* were especially common. Admixed with these species was *Parmelinopsis horrescens*. Species of *Usnea* were also well represented, especially *U. inermis* and what was probably *U. rubicunda*. Associated with these was *Ramalina australiensis* and *R. celastri*. Pohutukawa branchlets also provided an ideal habitat for *Teloschistes chrysophthalmus* and *T. sieberianus*, though neither was common.

At Te Panui Pa (Fig. 1), in the old orchard we collected *Physcia adscendens*, *Punctelia borreri* and *Xanthoria parietina* on the branches of old plum (*Prunus × domestica*) trees within the grounds of the old pa site. On these trees *Teloschistes chrysophthalmus* was, in contrast to the situation at nearby Opo Bay, locally common.

At mid-altitudes the macro-lichen diversity was similar to that observed along the coast, though the trunks and branches of mapou (*Myrsine australis*) sported a diversity of lichen "paints" and lirellate genera, few of which were collected. Here too the trunks of mahoe (*Melicytus ramiflorus*) were especially well ornamented with the white paint-like thallus of *Phlyctis sordida* (seen also in the boulder forest skirting the caldera cliff side of Te Paritu (Black Lake) (Fig. 1). In the ridgeline forest leading from Tutaretare Trig to Ruawairo Pass (Fig. 1) very large examples of *Sticta latifrons* were locally common, and in this area also grew *Lobaria asperula*, *Pannaria immixta*, *P. microphyllizans*, *Parmotrema austrocetratum*, *P. cetratum*, *Pseudocyphellaria aurata*, *P. chloroleuca*, *P. multifida*, *Sticta fuliginosa* and *S. squamata*. Dried out "scabs" of *Collema kauaiense* and *C. leucocarpum* and papery grey sheets of *Leptogium aucklandicum* and *L. coralloideum* were also frequent. *Hypogymnia subphysodes* var. *subphysodes* was also seen here on the exposed branches of pohutukawa. Many of the lower trunks of pohutukawa, manuka and kahikatoa (*Leptospermum* aff. *scoparium* (a) of de Lange & Rolfe 2011) sported yellow splashes of the spray-paint-like *Chrysothrix candelaris*, and patches of whitish *Bactrospora metabola* bearing minute, dark brown-black, fleck-like apothecia. Here too, on pohutukawa trunks *Megalospora knightii* was common. On a fallen branch we found examples of

the beautiful orange *Teloschistes flavicans*. Occasional specimens of *Coccocarpia erythroxyli*, *C. palmicola*, and *Menegazzia neozelandica* were also seen here on the lower trunks of pohutukawa, manuka, kahikatoa, rewarewa and *Coprosma lucida*. On the forest floor, especially along the track sides near Tutaretare Trig occasional examples of the terricolous *Peltigera nana* grew threaded through *Thuidium furfursum* and sparse tufts of bristle grass (*Rytidosperma* sp.). It was also in this ridgeline forest that we discovered *Pseudocyphellaria punctillaris*, hitherto only known from Raoul Island, in the Kermadecs (de Lange & Galloway *in press*). Its presence on Tuhua (Mayor Island) suggests that this distinctive blue-green species probably occurs elsewhere in northern New Zealand. In the dense forest fringing the crater rim between Tutaretare Trig and Ruru Pass (Fig. 1), rare specimens of *Pseudocyphellaria carpoloma* were also seen. The scarcity of this lichen on Tuhua (Mayor Island) is surprising considering its abundance in North Island coastal forest; perhaps we inadvertently overlooked it. Here too, on the trunks of senescent manuka we found a small amount of *Coccocarpia pellita* and on mapou (*Myrsine australis*), *Megalospora atrorubicans* subsp. *australis*.

Along the shoreline of Aroarotamahine (Green Lake) (Fig. 1) on the dead branches of manuka and mingimingi (*Leucopogon fasciculatus*), *Usnea angulata* and *U. pusilla* were common. Some of the *Usnea angulata* specimens measured over 1.8 m in length, though as is often the case with this species we found no fertile examples. Here too, on the trunks of manuka we found *Pseudocyphellaria episticta*. A young totara tree near the old picnic area above the lake provided habitat for *Dirinaria applanata* which we otherwise did not see on the island. Between the caldera wall and the shoreline of Te Paritu (Black Lake) within a large boulder fall covered with a dense pohutukawa – puriri (*Vitex lucens*) forest, the moss- and liverwort-covered rhyolite rocks sported dense growths of *Pseudocyphellaria chloroleuca*, *P. multifida*, and what may be *Coccotrema cucurbitula*. Mahoe trunks were here too, beautifully “painted” with white splashes of *Phlyctis sordida*. In this area the exposed roots of puriri sported patches of *Thelotrema lepadinum*, and what is probably *Pertusaria novaezelandiae* (or if not this then a species closely allied to it). On dead manuka branches overhanging the lake *Ramalina peruviana* was occasionally noted.

Between Te Paritu and Ruawaipiro Pass, the shaded boulder-fall rocks were often covered in dense growths of *Parmotrema tinctorum*, *Porina exocha*, and *Sticta squamata*. Here too, growing on mosses were some fine examples of *Physcia tribacioides*, while in similar habitats near Ruawaipiro Pass and on the caldera floor north of Aroarotamahine *Pseudocyphellaria dissimilis* was locally common.



Fig. 2. *Pseudocyphellaria aurata*, wetted material from Devil’s Staircase, Tuhua (Mayor Island) showing the labiform soralia. Photo: J.R. Rolfe.

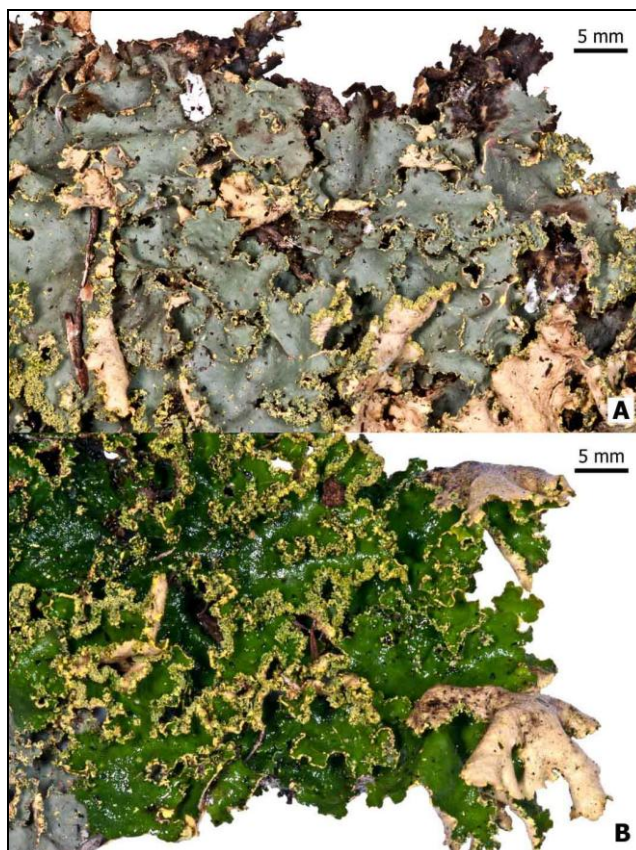


Fig. 3. *Pseudocyphellaria poculifera*, from Devil’s Staircase, Tuhua (Mayor Island). A: Air-dried specimen showing the fine, coralloid isidia. B: Same specimen, wetted. Photos: J.R. Rolfe.

On the caldera wall leading up to the base of the Devil’s Staircase (Fig. 1), the exposed rhyolite cliff faces and rumble slopes proved a rich lichen habitat sporting dense growths of *Parmotrema grayanum*, *P. tinctorum*, *Pseudocyphellaria aurata* (Fig. 2), *Heterodermia japonica*, *H. obscurata*, *H. speciosa*, *Hypotrachyna costaricensis*, *Pannaria elixii*, *Parmotrema austrocetratum*, and a fine, gracile form of *R. celastri*. A puzzling saxicolous *Parmelia* collected from here keys out to *P. protosignifera*, a species otherwise known only from alpine habitats from Otago south. Amongst the rhyolite and obsidian rocks and associated saprolite we also found plenty of

Leprocaulon arbuscula, a peculiar lichen that superficially resembles a *Stereocaulon* or *Cladonia* but whose sterile branched thallus is copiously covered in distinctive, pustular soredia. The surrounding forest of this area, dominated by senescent manuka, kahikatoa and emergent rewarewa and pohutukawa also provided a good habitat for *Coccocarpia palmicola*, *Pseudocyphellaria crocata*, *P. poculifera* (Fig. 3A, B) and *P. wilkinsii*, and occasional minute examples of *Sticta fuliginosa*.

The discovery of the tricky yellow medulla species pair *Pseudocyphellaria aurata* and *P. poculifera* growing in close proximity provided an excellent opportunity to compare the two species. Both are frequently confused, in part because the thallus isidia of *P. poculifera* eventually erode and so form soredia so resembling non-isidiate, prominently sorediate *P. aurata* (Fig. 2, 3A, 3B).

On the Round-the-Island walk the long, damp defile leading to Opuhi Spring (really a series of springs and semi-permanent seepages linking them) (Fig. 1) yielded a range of lichens either not seen or seemingly scarce elsewhere on the island during our survey. For example, here we found large specimens of *Pannaria allorhiza*, *P. leproloma*, *P. microphyllizans*, *P. sphinctrina* agg., as well as plenty of *Sticta latifrons*, *Pseudocyphellaria coriacea*, and *P. multifida*. The trunks of makomako (*Aristotelia serrata*) trees here were also often covered in *Coenogonium implexum* and *Megalania grossa*, as

well as, less frequently, examples of *Leptogium coralloideum* and *Physcia erumpens*.

Discussion

From the results obtained it's clear that Tuhua (Mayor Island) would repay critical investigation by an experienced lichenologist. Indeed, as the largest, fully vegetated island in the Bay of Plenty we find it surprising that this has not happened already. As such we stress that such a project is more than well worth undertaking and we hope that this preliminary report stimulates such a future outcome. Despite the limitations of our survey and time constraints we found a reasonable diversity of lichens (103 taxa), strongly suggesting that further survey of the lichenized mycobiota of Tuhua (Mayor Island) is warranted.

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References

- de Lange, P.J.; Smissen, R.D.; Wagstaff, S.J.; Keeling, D.J.; Murray, B.G.; Toelken, H.R. 2010: A molecular phylogeny and infrageneric classification for *Kunzea* (Myrtaceae) inferred from rDNA ITS and ETS sequences. *Australian Systematic Botany* 23: 309–319.
- de Lange, P.J.; Rolfe, J.R. 2011: Vascular Flora of Maungaraho Rock Scenic Reserve. *Wellington Botanical Society Bulletin* 53: 11–22.
- de Lange, P.J.; Crowcroft, G.M.; de Lange, T.J.; de Lange, F.J. 2012a: A preliminary account of the bryophytes of Tuhua (Mayor Island). *Auckland Botanical Society Journal* 67: 34–35.
- de Lange, P.J.; Galloway, D.J.; Blanchon, D.J.; Knight, A.; Rolfe, J.R.; Crowcroft, G.M.; Hitchmough, R. 2012b: Conservation status of New Zealand lichens. *New Zealand Journal of Botany* 50: 303–363.
- de Lange, P.J.; Galloway, D.J. *in press*: Lichen notes from Raoul Island, Kermadecs Group, New Zealand. I. Lobariaceae. *Bulletin of the Auckland Museum* 20.
- Galloway, D.J. 1985. *Flora of New Zealand Lichens*. Wellington, Government Printer. 662p.
- Galloway, D.J. 1994: Studies in *Pseudocyphellaria* (lichens) IV. Palaeotropical species (excluding Australia). *Bulletin of the Natural History Museum, Botany Series* 24: 115–159.
- Galloway, D.J. 2007: Flora of New Zealand Lichens. Revised Second Edition. Volume 1. Lincoln, Manaaki Whenua Press. 2261p.
- Ngā Tipu o Aotearoa – New Zealand Plants Database (<http://nzflora.landcareresearch.co.nz/> accessed 17 September 2012).
- Wilcox, M.; Shanks, J.; de Lange, P. 2012a: A visit to Tuhua (Mayor Island). *Auckland Botanical Society Journal* 67: 17–33.
- Wilcox, M.; de Lange, P.; Hutton, P. 2012b: Seaweeds of Tuhua (Mayor Island). *Auckland Botanical Society Journal* 67: 35–38.

Appendix: Tuhua (Mayor Island) Lichens.

= Lichenicolous fungus

Lichen taxa	Family	Voucher
<i>Austroparmelina conlabrosa</i> (Hale) A.Crespo, Divakar et Elix	Parmeliaceae	AK 332633
<i>A. labrosa</i> (Zahlbr.) A.Crespo, Divakar et Elix	Parmeliaceae	AK 332512
? <i>Bacidia</i> sp.	Bacidiaceae	AK 213484
<i>Bactrospora metabola</i> (Nyl.) Egea et Torrente	Roccellaceae	UNITEC 5399
<i>Calicium lenticulare</i> Ach.	Physciaceae	AK 332731

<i>Chrysothrix candelaris</i> (L.) J.R.Laundon	Chrysotricaceae	AK 331947
<i>Cladia aggregata</i> (Sw.) Nyl.	Cladoniaceae	AK 331893
<i>Cladonia floerkeana</i> (Fr.) Flörke	Cladoniaceae	AK 162017
<i>Coccocarpia erythroxyli</i> (Spreng.) Swinscow et Krog	Coccocarpiaceae	AK 332498
<i>C. palmicola</i> (Spreng.) Arv. et D.J.Galloway	Coccocarpiaceae	AK 331934
<i>C. pellita</i> (Ach.) Müll.Arg.	Coccocarpiaceae	AK 332745
<i>Coccotrema curcubitula</i> (Mont.) Müll.Arg.	Coccotremataceae	AK 332741
<i>Coenogonium implexum</i> Nyl.	Coenogoniaceae	AK 331898
<i>Collema kauaiense</i> H.Magn.	Collemataceae	AK 331898
<i>C. leucocarpum</i> Hook.f. et Taylor	Collemataceae	AK 332822
* <i>Dactylospora lobariella</i> (Nyl.) Hafellner	Dactylosporaceae	AK 331944
<i>Dirinaria applanata</i> (Fée) Awasthi	Physciaceae	AK 332851
<i>D. picta</i> (Sw.) Clem. et Shear	Physciaceae	AK 332850
<i>Heterodermia japonica</i> (M.Satô) Swinscow et Krog	Physciaceae	AK 332814
<i>H. leucomela</i> (L.) Poelt	Physciaceae	AK 331956
<i>H. obscurata</i> (Nyl.) Trevis.	Physciaceae	UNITEC 5370
<i>H. speciosa</i> (Wulfen) Trevis.	Physciaceae	AK 331921
<i>Hypogymnia subphysodes</i> (Kremp.) Filson var. <i>subphysodes</i>	Parmeliaceae	AK 332732
<i>Hypotrachyna costaricensis</i> (Nyl.) Hale	Parmeliaceae	AK 332629
<i>H. imbricatula</i> (Zahlbr.) Hale	Parmeliaceae	AK 332631
<i>H. rockii</i> (Zahlbr.) Hale	Parmeliaceae	AK 332503
<i>Jackelxia ligulata</i> (Körb.) S.Y.Kondr., Federenko, S.Stenroos, Kärnefelt et A.Thell	Teloschistaceae	AK 333328
<i>Leprocaulon arbuscula</i> (Nyl.) Nyl.	Lecanorales genera incertae sedis	UNITEC 5404
<i>Leptogium aucklandicum</i> Zahlbr.	Collemataceae	AK 332514
<i>L. coralloideum</i> (Meyen et Flot.) Vain.	Collemataceae	AK 332520
<i>L. ?propaguliferum</i> Vain.	Collemataceae	AK 332518
<i>Lichina pygmaea</i> (Lightf.) C.Agardh	Lichinaceae	AK 332855
<i>Lobaria asperula</i> (Stirt.) Yoshim.	Lobariaceae	AK 332856
<i>Megalaria grossa</i> (Pers. ex Nyl.) Hafellner	Megalariaceae	UNITEC 5369
<i>M. melanotropa</i> (Nyl.) D.J.Galloway	Megalariaceae	UNITEC 5397
<i>Megaloblastenia flavidoatra</i> (Nyl.) Sipman	Megalosporaceae	AK 332807
<i>Megalospora atrorubicans</i> subsp. <i>australis</i> Sipman	Megalosporaceae	AK 332813
<i>M. knightii</i> Sipman	Megalosporaceae	UNITEC 5355
<i>Menegazzia neozelandica</i> (Zahlbr.) P.James	Parmeliaceae	AK 331937
<i>Pannaria allorhizum</i> (Nyl.) Elvebakk et D.J.Galloway	Pannariaceae	AK 332522
<i>P. elixii</i> P.M.Jørg. et D.J.Galloway	Pannariaceae	AK 331908
<i>P. fulvescens</i> (Mont.) Nyl.	Pannariaceae	AK 332808
<i>P. immixta</i> Nyl.	Pannariaceae	AK 332516
<i>P. leproloma</i> (Nyl.) P.M.Jørg.	Pannariaceae	AK 332521
<i>P. microphyllizans</i> (Nyl.) P.M.Jørg.	Pannariaceae	AK 332648
<i>P. sphinctrina</i> (Mont.) Tuck. ex Hue agg.	Pannariaceae	AK 331953
<i>P. ?subcrustacea</i> (Räsänen) P.M.Jørg.	Pannariaceae	AK 332811
<i>Parmelia erumpens</i> Kurok.	Parmeliaceae	AK 332634
<i>P. ?protosignifera</i> Elix et J.Johnst.	Parmeliaceae	AK 332810
<i>Parmelinopsis horrescens</i> (Taylor) Elix et Hale	Parmeliaceae	AK 332626
<i>Parmotrema austrocetratum</i> Elix et J.Johnst.	Parmeliaceae	AK 332515
<i>P. cetratum</i> (Ach.) Hale	Parmeliaceae	AK 332536
<i>P. crinitum</i> (Ach.) M.Choisy	Parmeliaceae	AK 333329
<i>P. grayanum</i> (Hue) Hale	Parmeliaceae	AK 332509
<i>P. perlatum</i> (Huds.) M.Choisy	Parmeliaceae	AK 333330

<i>P. reticulatum</i> (Taylor) M.Choisy	Parmeliaceae	AK 332504
<i>P. tinctorum</i> (Nyl.) Hale	Parmeliaceae	AK 331917
<i>Peltigera nana</i> Vain.	Peltigeraceae	AK 332500
<i>Pertusaria ? novaezealandiae</i> Szatala	Pertusariaceae	AK 332511
<i>P. sp.</i>	Pertusariaceae	AK 332642
<i>Phlyctis sordida</i> C.Knight	Phlyctidaceae	AK 331926
<i>Physcia adscendens</i> H.Olivier	Physciaceae	AK 331891
<i>P. erumpens</i> Moberg	Physciaceae	AK 332809
<i>P. poncinsii</i> Hue	Physciaceae	AK 332806
<i>P. tribacoides</i> Nyl.	Physciaceae	AK 11041
<i>Porina exocha</i> (Nyl.) P.M.McCarthy	Trichotheliaceae	AK 331901
<i>Pseudocyphellaria aurata</i> (Ach.) Vain.	Lobariaceae	AK 331889
<i>P. carpoloma</i> (Delise) Vain.	Lobariaceae	AK 331928
<i>P. chloroleuca</i> (Hook.f. et Taylor) Du Rietz	Lobariaceae	AK 331932
<i>P. coriacea</i> (Hook.f. et Taylor) D.J.Galloway et P.James	Lobariaceae	AK 331942
<i>P. crocata</i> (L.) Vain.	Lobariaceae	AK 331961
<i>P. dissimilis</i> (Nyl.) D.J.Galloway et P.James	Lobariaceae	AK 162016
<i>P. episticta</i> (Nyl.) Vain.	Lobariaceae	AK 331923
<i>P. montagnei</i> (C.Bab.) D.J.Galloway et P.James	Lobariaceae	AK 332323
<i>P. multifida</i> (Nyl.) D.J.Galloway et P.James	Lobariaceae	AK 331920
<i>P. pickeringii</i> (Tuck.) D.J.Galloway	Lobariaceae	AK 331931
<i>P. poculifera</i> (Müll.Arg.) D.J.Galloway et P.James	Lobariaceae	AK 331911
<i>P. wilkinsii</i> D.J.Galloway	Lobariaceae	AK 331951
<i>Punctelia borneri</i> (Sm.) Krog	Parmeliaceae	AK 332852
<i>Ramalina australiensis</i> Nyl.	Ramalinaceae	AK 330964
<i>R. celastri</i> (Spreng.) Krog et Swinscow	Ramalinaceae	AK 161996
<i>R. peruviana</i> Ach.	Ramalinaceae	AK 332740
<i>Rhizocarpon geographicum</i> (L.) DC.	Rhizocarpaceae	UNITEC 5405
<i>Stereocaulon ramulosum</i> (Sw.) Räsusch.	Stereocaulaceae	AK 332733
<i>Sticta fuliginosa</i> (Hoffm.) Ach.	Lobariaceae	AK 331955
<i>S. latifrons</i> A.Rich.	Lobariaceae	AK 332160
<i>S. martinii</i> D.J.Galloway	Lobariaceae	AK 332325
<i>S. squamata</i> D.J.Galloway	Lobariaceae	AK 332321
<i>Teloschistes chrysophthalmus</i> (L.) Th.Fr.	Teloschistaceae	AK 331967
<i>T. flavicans</i> (Sw.) Norman	Teloschistaceae	AK 331939
<i>T. sieberianus</i> (Laurer) Hillmann	Teloschistaceae	AK 331966
<i>Thelotrema lepadinum</i> (Ach.) Ach.	Thelotremataceae	AK 332737
<i>Usnea angulata</i> Ach.	Parmeliaceae	AK 332739
<i>U. inermis</i> Motyka	Parmeliaceae	AK 332818
<i>U. nidifica</i> Taylor	Parmeliaceae	AK 332735
<i>U. pusilla</i> (Räsänen) Räsänen	Parmeliaceae	AK 332738
<i>U. ? rubicunda</i> Stirt.	Parmeliaceae	AK 332748
<i>U. sp.</i>	Parmeliaceae	AK 332749
<i>Xanthoparmelia furcata</i> (Müll.Arg.) Hale	Parmeliaceae	AK 331922
<i>X. glabrans</i> (Nyl.) O.Blanco, A.Crespo, Elix, D.Hawksw. et Lumbsch	Parmeliaceae	AK 332736
<i>X. pulla</i> (Ach.) O.Blanco, A.Crespo, Elix, D.Hawksw. et Lumbsch	Parmeliaceae	AK 332734
<i>X. scabrosa</i> (Taylor) Hale	Parmeliaceae	AK 333327
<i>Xanthoria parietina</i> (L.) Th.Fr.	Teloschistaceae	AK 333641

c. 103 taxa