

## Supplemental Information 1

Taxon	Voucher	<i>rps4</i> <sup>a</sup>	<i>nad5</i> <sup>b</sup>	26S rRNA <sup>c</sup>
<i>Abietinella abietina</i>	Schofield 103458 (DUKE)	AY907953	AY908386	-
<i>Acanthorrhynchium papillatum</i>	Kristoferson 1990-04-17 (NY)	AY908206	AY908468	-
<i>Achrophyllum quadrifarium</i>	Streimann 51258 (NY)	AY449660	AY452316	HM751243
<i>Acidodontium sprucei</i>	Steere & Baslav 25680 (H)	AY078316	AY908357	HM751503
<i>Acrocladium auriculatum</i>	Kantak & Churchill 166 (NY)	AY306854	AY908747	HM751247
<i>Acroporium pungens</i>	Buck 33028 (NY)	AY908207	AY908539	HM751374
<i>Acroschisma wilsonii</i>	Cox 00-668 (DUKE)	AY908011	AY908811	AY330425
<i>Actinodontium sprucei</i>	Buck 37977 (NY)	AY306855	AY908451	AY452397
<i>Actinothuidium hookeri</i>	Croat 76028 (MO)	AY908335	AY908399	HM751288
<i>Adelothecium bogotense</i>	Vital & Buck 19649 (NY)	AY306856	AY452318	AY452398
<i>Aerobryidium aureo-nitens</i>	Redfearn 2270 (MO)	AY306857	AY908730	-
<i>Aerobryopsis longissima</i>	Streiman 57914 (MO)	AY306859	AY908719	HM751485
<i>Aerobryum speciosum</i>	Allen 6642 (MO)	AY306861	AY908498	HM751302
<i>Aerolindigia cappilacea</i>	Lineares 3721 (MO)	AY908303	AY908511	HM751313
<i>Aloina rigida</i>	Ignatov 8/282 (BUF)	AY908024	AY908819	HM751528
<i>Aloinella cucullifera</i>	Balslev 23594 5/19/80, (DUKE)	AY908071	-	HM751548
<i>Alophosia azorica</i>	Rumsey s.n. (DUKE)	AY330476	AY312867	AY330424
<i>Alsia californica</i>	Shevock 18765 (MO)	AY908258	AY908639	HM751462
<i>Amblyodon dealbatus</i>	Hedderson 3975a (RNG)	AF023806	AY908377	HM751323
<i>Amblystegium serpens</i>	Newton 4714 (herb. Newton)	AY908237	AY908685	-
<i>Amblytropis hispidula</i>	Lyon 54 (MO)	AY908609	AY908452	-
<i>Amphidium lapponicum</i>	Schofield 98089 (DUKE)	AF222896	AY908962	HM751586
<i>Anacamptodon splachnoides</i>	Buck 32568 (NY)	AF143031	AY908419	HM751411
<i>Anacolia webbii</i>	Dull, 1998 (herb. Goffinet)	AY907987	AY908949	HM751522
<i>Ancistrodes genuflexa</i>	Holz & Franzaring CH 00-154 (NY)	AY306863	AY452319	AY452399
<i>Andoa berthelotiana</i>	Hedenas B4599 (MO)	AY908179	AY908438	HM751480
<i>Andreaea rothii</i>	Shaw 11565 (DUKE)	AY312866	AY312862	AY312860
<i>Andreaebryum macrosporium</i>	Schofield 78094 (DUKE)	AF306953	-	AY330426
<i>Anoetangium aestivum</i>	Schofield 104414 (MO)	AY908049	AY908832	HM751554
<i>Anomobryum julaceum</i>	Cox s.n. (RNG)	AF023786	AY908353	HM751504
<i>Anomodon viticulosus</i>	Rumsey 185/4 25/7/85 (herb. Rumsey)	AY908201	-	HM751351
<i>Antitrichia curtipendula</i>	Goffinet 7829 (CONN)	AY908570	AY908645	HM751369
<i>Aongstroemia jamaicensis</i>	Allen 6403 (DUKE)	AY908094	AY908869	HM751612
<i>Aphanorrhagma serratum</i>	Goffinet s.n. (herb. Goffinet)	AF223048	AY908931	HM751652
<i>Aplodon wormskioldii</i>	Nimis s.n. (herb. Goffinet)	AY039047	AY908955	HM751325
<i>Aptychella prolifera</i>	Vital & Buck 19448 (NY)	AY908228	AY908474	HM751392
<i>Aptychopsis pyrophylla</i>	Vital & Buck 19464 (NY)	AY908212	AY908476	HM751376
<i>Archidium donnellii</i>	Risk 1536 (DUKE)	AY908090	AY908972	-
<i>Arctoa fulvella</i>	Schofield 102571 (DUKE)	AY908075	AY908894	HM751635
<i>Arthrocormus schimperi</i>	Reese 17371 (DUKE)	AY908151	AY908874	-
<i>Aschisma carniolicum</i>	Cano et al. 7968 (MUB)	AY908054	AY908851	-
<i>Astomiopsis kienerii</i>	Cardenas 3953 (DUKE)	AY908072	AY908857	HM751549
<i>Atractylorcarpus longisetus</i>	Churchill et al. 15076-a (DUKE)	AY908126	AY908905	-
<i>Atrichum undulatum</i>	Goffinet 7605 (CONN)	AY908018	AY908810	HM751698
<i>Aulacomnium androgynum</i>	Cox 149 (RNG)	AF023811	AJ291564	HM751683
<i>Aulacopilum hodgkinsoniae</i>	Vitt 28261 (ALTA)	AY908116	AY908968	HM751574
<i>Baldwiniella kealeensis</i>	Flynn 5137 (NY)	AY908590	AY908734	HM751263
<i>Barbella cubensis</i>	Allen 14172 (DUKE)	AY908285	AY908722	HM751491
<i>Barbelopsis trichophora</i>	Streimann 56092 (NY)	AY908288	AY908723	HM751492
<i>Barbula unguiculata</i>	Zander 1975 (BUF)	AF306986	AY908844	HM751536
<i>Bartramia stricta</i>	Longton 4871 (RNG)	AF023799	AY312870	AY330428
<i>Bartramiopsis lescurii</i>	Schofield 99187 (MO)	AY908019	AY908800	HM751510
<i>Beeveria distichophylloides</i>	Fife 11150 (NY)	AY306867	AY452320	AY452400
<i>Bellibarbula recurva</i>	Anderson 24981 July, 14, 1987 (DUKE)	AY908032	AY908797	HM751541
<i>Benitotania wakatzenokaii</i>	Akiyama & Suleiman, 20 Sep 2002 (NY)	AY449661	AY452321	AY452401
<i>Bescherellia brevifolia</i>	Streiman 38462 (RNG)	AJ251313	-	-
<i>Bestia vancouveriensis</i>	Newton 5017 (herb. Newton)	AY908328	AY908660	HM751470
<i>Bissetia lingulata</i>	Yamaguchi, 2000 (MO)	AY908352	AY908448	HM751338
<i>Blindia acuta</i>	Hedderson 11828 (RNG)	AF023781	AY908928	HM751597
<i>Boulaya mitteni</i>	Shevock 16392 (MO)	AY908338	AY908395	HM751289

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
<i>Brachelyma subulatum</i>	Allen, Font. exs. 87 (DUKE)	AF306998	AY908492	HM751500
<i>Brachymenium nepalense</i>	Long 23614 (RBG)	AY078338	AY908354	HM751616
<i>Brachymitrium jamesonii</i>	Griffin PV-1320 (DUKE)	AY908000	-	HM751326
<i>Brachythecium salebrosum</i>	Goffinet 4723 (DUKE)	AF143027	AY312871	AY330429
<i>Braithwaitea sulcata</i>	Streimann 38403 (RNG)	AF023820	AY452323	AY452403
<i>Braunfelsia dicranoides</i>	Koponen 32555 (DUKE)	AY908102	AY908879	-
<i>Braunia secunda</i>	DeLuna 2245 (herb. DeLuna)	AY907992	AY908378	HM751664
<i>Breutelia scoparia</i>	McDowell 4039 (NY)	AF143075	AY908382	HM751524
<i>Brothera leana</i>	Long 21998 (DUKE)	AY908129	AY908911	HM751587
<i>Brotherella recurvans</i>	Buck 31506 (NY)	AY908227	AY908470	HM751708
<i>Bruchia drummondii</i>	Shaw 8716, March 14, 1997 (DUKE)	AY908086	AY908799	HM751581
<i>Bryhnia novae-angliae</i>	Buck 32561 (NY)	AY908308	AY908523	-
<i>Brymela tutezona</i>	Salazar et al. 13656 (NY)	AY449662	AY908454	AY452404
<i>Bryoandersonia illecebra</i>	Goffinet 5274 (herb. Goffinet)	AY908317	AY908471	-
<i>Bryobartamia nova-valesiae</i>	Magill and Schelpe 3218a (DUKE)	AY908160	AY908967	-
<i>Bryobrittonia longipes</i>	Hedderson 5911 (RNG) -	AF023778	AY908790	-
<i>Bryobrothera crenulata</i>	Streimann 57716 (NY)	AY306869	AY452325	AY452406
<i>Bryocrumia andersonii</i>	Redfearn & Su 971 (DUKE)	AY908196	AY908437	-
<i>Bryoerythrophyllum campylocarpum</i>	Churchill 19042 (BUF)	AY908027	AY908845	-
<i>Bryohumbertia filifolia</i>	Allen 14212, March 19, 1993 (DUKE)	AY908127	AY908793	HM751593
<i>Bryomaltaea obtusifolius</i>	Allen 12284 (DUKE)/Schofield 98451 (DUKE)	AY908006	AY908948	AY621513
<i>Bryomanginia saint-pierrei</i>	Allen 12962 July 18, 1992 (DUKE)	AY908795	AY908141	-
<i>Bryonorrisia acutifolia</i>	Redfearn & Su 1003 (DUKE)	AY908553	AY908450	HM751339
<i>Bryostreimannia turgida</i>	Streimann 53659 (NY)	AY908556	AY908392	HM751407
<i>Bryowijkia ambigua</i>	Ellis 901 (BM)	AY908100	AY908873	HM751613
<i>Bryoxiphium norvegicum</i>	Norris 81646 (UC)	AY908092	AY908957	HM751720
<i>Bryum argenteum</i>	Hedderson 12 (RNG)	AY078318	AY908945	HM751696
<i>Buxbaumia aphylla</i>	Belland 16889 (DUKE)	AF306959	AY312872	AY330430
<i>Callialaria curvicaulis</i>	Allen 10426 (MO)	AY908249	AY908424	HM751421
<i>Callicladium haldanianum</i>	Schofield 97218 (MO)	AY908561	AY908760	HM751477
<i>Callicostella pallida</i>	Holz FG 00-14 (NY)	AY306872	AY452328	AY452410
<i>Callicostellopsis meridensis</i>	Griffin PV-898 (NY)	AY306871	AY452327	AY452409
<i>Calliergon cordifolium</i>	Rumsey 136/3 (herb. Rumsey)	AF469844	AY908710	HM751346
<i>Calliergonella cuspidata</i>	Schofield 105806 (MO)	AY908183	AY908403	HM751408
<i>Calomnion complanatum</i>	Streimann 51519 (MO)	AY907997	AY908946	-
<i>Calymperes lonchophyllum</i>	Churchill, Callejas, & Acevedo (DUKE)	AY908152	AY908796	HM751618
<i>Calyptopogon mnioides</i>	Streimann 59469 (MO)	AY908041	AY908816	-
<i>Calyptothecium praelongum</i>	Newton & Bell 5299 (herb. Newton)	AY908594	AY908699	HM751430
<i>Calyptrochaeta brownii</i>	Streimann 60613 (NY)	AY306873	AY452329	AY452411
<i>Camptochaete arbuscula</i>	Streimann 51516 (MO)	AY908330	AY908658	HM751473
<i>Campylidadelphus stellatus</i>	Lisowski B11801 (MO)	AY908248	AY908417	HM751409
<i>Campylium chrysophyllum</i>	Buck 32532 (NY)	AF143048	AY908418	HM751410
<i>Campylophyllum halleri</i>	Schofield et al. 93659 (MO)	AY908252	AY908433	HM751271
<i>Campylopododiella stenocarpa</i>	Delgadillo 5002 (DUKE)	AY908131	AY908909	HM751589
<i>Campylopodium euphorocladium</i>	Withey 506 10 June 1992 (DUKE)	AY908095	AY908794	HM751610
<i>Campylopus introflexus</i>	Shaw 10490 (DUKE)	AY908128	AY908906	HM751595
<i>Campylostelium augustifolium</i>	Allen 22321 (MO)	AY908147	AY908929	HM751598
<i>Canalohypopterygium tamariscinum</i>	Frey & Pfeiffer 98-T10C (CHR)	AY306878	AY452331	-
<i>Cardotiella subappendiculata</i>	Arts 18/01 (herb. Goffinet)	AY908615	AY908937	AY621538
<i>Caribaeohypnum polypterum</i>	Dauphin 2083 (MO)	AY908347	AY908628	HM751448
<i>Catagoniopsis berterooana</i>	Mahu 50182 (MO)	AY908200	AY908756	HM751249
<i>Catagonium nitens</i>	Goffinet 5459 (herb. Goffinet)	AF307003	AY908473	HM751697
<i>Catharomnion ciliatum</i>	Streimann 51423 (NY)	AY306879	AY452332	AY452414
<i>Catoscopium nigratum</i>	Longton 4592 (RNG)	AF307001	AY908927	-
<i>Ceratodon purpureus</i>	Arts REU 44/15 (DUKE)	AY908123	AY908862	HM751561
<i>Chaetomitriopsis glaucocarpa</i>	Wang 4046A (MO)	AY908603	AY908681	HM751354
<i>Chaetomitrium borneense</i>	Tan 95-1116 (NY)	AY306880	AY452333	AY452415
<i>Chamaebryum pottioides</i>	Venter 346 (DUKE)	AF223051	AY908983	HM751655
<i>Cheilothela chloropus</i>	Werner & Ros 14024 (DUKE)	AY908124	AY908861	HM751547
<i>Chenia leptophylla</i>	Schafer-Verwimp 14361 (MO)	AY908042	AY908815	HM751532
<i>Chionostomum rostratum</i>	Readfearn 33924 (NY)	AY908210	AY908477	HM751377
<i>Chorisodontium mittenii</i>	Churchill et al. 19750 (MO)	AY908107	AY908885	HM751624
<i>Chryso-hypnum diminutivum</i>	Churchill et al. 20423 (MO)	AY908345	AY908625	-
<i>Chrysoblastella chilense</i>	Buck 39507 (DUKE)	AY908165	AY908789	HM751657
<i>Chrysocladium flammeum</i>	Weber B-99410 (MO)	AY908287	AY908725	HM751487
<i>Cinclidium stygium</i>	Hedderson 10477 (RNG)	AF023791	AY908361	HM751673

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Cinclidotus aquaticus	Boscher et al. (herb. Goffinet)	AY908029	AY908843	HM751712
Cirriphyllum cirrosum	Allen 19686 (MO)	AY908310	AY908524	HM751330
Cladomnion ericoides	Streimann 51478 (NY)	AY306884	AY452336	AY452418
Cladomniopsis crenato-obtusa	Buck 41360 (NY)	AY306883	AY452335	-
Cladophascum gymnomitrioides	Perold 2475 (MO)	AY908097	AY908871	HM751615
Cladopodanthus speciosus	Tan, 1991 (NY)	AY908132	AY908912	HM751590
Claopodium whippleanum	Shevock 19289 (DUKE)	AY908294	AY908746	HM751484
Clasmatodon parvulus	Buck 33446 (NY)	AF143032	AY908519	HM751317
Clastobryella kusatsuensis	Buck 9611 (NY)	AY908226	AY908460	-
Clastobryophilum bogoricum	Tan 93-319 May. 1993 (NY)	AY908208	AY908822	-
Clastobryopsis planula	Crosby 16026 (MO)	AY908229	AY908550	-
Clastobryum tenuirameum	G&S Miede 14945 27.10.1986 (NY)	AY908230	AY908481	HM751707
Climacium americanum	Newton 5000 (herb. Newton)	AY908573	AY908646	HM751424
Cnestrum alpestre	Buck 36198 (NY)	AY908077	AY908896	HM751631
Codonoblepharon menziesii	Shevock 18773 (herb. Goffinet)	AY908175	AY908497	-
Colobodontium vulpinum	Allen 19306 (MO)	AY908215	AY908534	HM751383
Conardia compacta	Shevock 16984 (MO)	AY908568	AY908634	HM751301
Conostomum tetragonum	Goffinet 5755 (herb. Goffinet)	AF306990	AY908954	HM751527
Coscinodon calyptratus	Schofield 109633 (DUKE)	AJ553978	AY908918	HM751577
Cratoneuron filicinum	Smith 3618 (MO)	AY908250	AY908425	HM751422
Cratoneurosis relaxa	Streimann 65232 (MO)	AY908244	AY908427	HM751413
Crosbya straminea	Fife 10379 (NY)	AY306887	AY908490	AY452421
Crossidium crassinerve	Ros 26/2/2002 (MU)	AY908037	AY908823	HM751711
Crossomitrium epiphyllum	Buck 33259 (NY)	AY306885	AY452337	AY452419
Crumia latifolia	Buck 30338 (NY)	AY908031	AY908821	HM751534
Cryphaea patens	DeLuna 2243 (herb. DeLuna)	AY908184	AY908695	HM751294
Cryptodictyon armitii	Streimann 20377, 6/14/82 (DUKE)	-	-	HM751647
Cryptogonium phyllogonoides	Buck 7395 (NY)	AY908598	AY908703	HM751435
Cryptoleptodon longisetus	Schafer-Verwimp 4206 (MO)	AY908260	AY908651	HM751466
Cryptopapillaria penicillata	Churchill & Betancur 16932 (NY)	AY908292	AY908717	HM751494
Cryptopodium bartramiooides	Frahm, 1998 (MO)	AY907998	AY908774	HM751667
Ctenidium molluscum	Newton 4717 (herb. Newton)	AY907954	AY908440	HM751482
Curviciadium kurzii	Akiyama 85 (NY)	AY908266	AY908670	HM751360
Curviramea mexicana	Buck 28242 (NY)	AF143062	AY908629	HM751447
Cyathophorella hookeriana	Akiyama 39 (NY)	AY306890	AY452340	AY452423
Cyathophorum bulbosum	Streimann 55638 (NY)	AY306889	AY452339	AY452422
Cyclodictyon albicans	Churchill et al. 18795 (NY)	AY306892	AY452342	AY452425
Cynodontium strumiferum	Allen, 2000 (MO)	AY908078	AY908897	HM751632
Cyrtodon muelleri	Vitt 27223 (NY)	AY908586	AY908686	HM751295
Cyrtodontopsis obtusifolia	Akiyama, 1990 (NY)	AY908588	AY908687	HM751296
Cyrto-hypnum schistocalyx	Newton, Equihua & DeLuna 4618 (herb. Newton)	AY908336	AY908396	-
Cyrtomnium hymenophyllum	Hedderson 4776 (RNG) -	AF023792	AY908363	HM751676
Cyrtopodendron vieillardii	van der Werff & McPherson 16072 (MO)	AY908010	AY908768	-
Cyrtopus setosus	Frahm 1998 (MO)	AY908007	AY908773	HM751617
Daltonia gracilis	Buck 39508A (NY)	AY306894	AY452344	AY452427
Dawsonia superba	Kantak 582 (DUKE)	AY908016	AY908804	HM751513
Dendroalsia abietina	Goffinet 7764 (CONN)	AY908185	AY908459	HM751264
Dendrocryphaea cuspidata	Holz & Franzaring 00-95 (MO)	AY908587	AY908694	HM751298
Dendrocryphorum decolyi	Matsui 7264 (NY)	AY306896	AY452346	AY452429
Dendrohypopterygium arbusculum	Holz & Franzaring CH 00-80 5 Dec 2000 (NY)	AY449665	AY452366	AY452445
Dendroligotrichum dendroides	Goffinet 5425 (herb. Goffinet)	AF306957	AY312873	AY330431
Dendropogonella rufescens	Schafer-Verwimp SV/H-0478 (MO)	AY908562	AY908708	HM751340
Desmotecha apiculata	Vinas 96-4 (herb. Goffinet)	AY908614	AY908942	HM751703
Dialytrichia mucronata	DeSloover 45.173 (MO)	AY908030	AY908830	HM751540
Diaphanodon blandum	Long 18822 (DUKE)	AY908291	AY908731	HM751499
Dichelodontium nitidum	MacMillan 1/5/1999 99/14 (CHR)	AY449664	AY452347	-
Dichelyma falcatum	Allen Font. Exs. 92 (DUKE)	AY908318	AY908493	HM751501
Dichodontium pellucidum	Goffinet 7967 (CONN)	AY908114	AY908971	-
Dicnemon seriatum	Newton & Bell 5400 (herb. Newton)	AY908104	AY908886	-
Dicranella heteromalla	Goffinet 8162 (CONN)	AY908099	AY908938	HM751700
Dicranodontium meridionale	Lyon 1992 (MO)	AY908130	AY908910	HM751588
Dicranoloma eucamptodontoides	Newton & Bell 5757 (herb. Newton)	AY908103	AY908887	HM751628
Dicranoweisia crispula	Schofield 108251 (DUKE)	AY908164	AY908925	HM751645
Dicranum scoparium	Rumsey s.n. (herb. Rumsey)	AF234158	AY908884	HM751626
Didymodon rigidulus	Allred & Allred 6443 (MO)	AY908047	AY908828	HM751543
Dimerodontium balansae	Bordas 56 23 (NY)	AY907952	AY908409	HM751273

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Dimorphocladon borneense	Tan 95-1060 (NY)	AY306898	AY452348	HM751355
Diphyscium foliosum	Goffinet 4492 (herb. Goffinet)	AF223034	AY312874	AY330432
Diploneuron connivens	Crosby 13732 (NY)	AY306899	AY908457	AY452431
Discelium nudum	Hylander 2574 (CONN) & Smith 47503 (NYSM)	AF223063	AY908956	HM751656
Distichium capillaceum	Allen 9698 (MO)	AY908162	AY908786	HM751584
Distichophyllidium nymanianum	Mohamed & Damanhuri 1118 (NY)	AY306901	AY452350	HM751242
Distichophyllum pulchellum	Streimann 51380 (NY)	AY306902	AY452351	AY452433
Ditrichum pallidum	Nelson 13749 (DUKE)	AF306979	AY908934	HM751562
Dixonia thamnoides	Akiyama Th-12 (HYO)	AY907956	AY908469	HM751706
Dolichomitria cymbifolia	Deguchi s.n. (MO)	AY908344	AY908495	HM751336
Dolichomitriopsis diversiformis	Shevock 17935 (MO)	AY908329	AY908663	-
Dolotortula mniifolia	Djan-Chekan 94-71 (NY)	AY908036	AY908824	HM751535
Donnellia commutata	Allen11883A (MO)	AY908211	AY908536	HM751384
Dozya japonica	Mizutani 13730 (DUKE)	AY908262	AY908649	HM751468
Drepanocladus aduncus	Shevock, 1998 (MO)	AY908241	AY908422	HM751415
Drummondia obtusifolia	Goffinet 5586 (DUKE)	AF223038	AY908926	HM751717
Dryptodon patens	Shevock 20102 (MO)	AY908142	AY908921	HM751604
Duthiella wallichii	Redfearn 35722 (MO)	AY908286	AY908728	HM751693
Eccremidium floridanum	Allen 7505 (DUKE)	AY908098	AY908872	HM751614
Echinodium umbrosum	Streimann 49668 (NY)	AY908269	AY908680	HM751352
Ectropothecium leptochaeton	Whittemore 5594 (MO)	AY908558	AY908405	HM751405
Elmeribryum philippinense	Koponen 33157 (DUKE)	AY908323	AY908388	HM751404
Encalypta ciliata	Schofield 98872 (DUKE)	AY908161	AY312875	AY330433
Entodon hampeanus	DeLuna 2261 (herb. DeLuna)	AY908254	AY908767	-
Entodontopsis leucostega	Newton 4583 (herb. Newton)	AY908295	AY908501	HM751306
Entosthodon laevis	Goffinet 5601 (herb. Goffinet)	AY908156	AY312876	AY330434
Ephemeroopsis trentepohlioides	Macmillan 95/94 (NY)	AY306906	AY908491	-
Ephemerum serratum	Goffinet 4524 (herb. Goffinet)	AY908061	AY908848	HM751716
Epipterygium wrightii	Allen 6400 (MO)	AY907985	AY908372	HM751675
Eriodon conostomus	Mahu 21497 (MO)	AY908239	AY908684	HM751412
Erythrodonium longisetus	Newton 4282 (herb. Newton)	AY908256	AY908527	HM751280
Erythrophyllopsis fuscula	Churchill et al 19928 (MO)	AY908028	AY908831	HM751539
Eucampyton perichaetialis	Holz & Franzaring CH 00-119 (MO)	AY908081	AY908899	HM751641
Eucladium verticillatum	Dull 24.6.96 (herb. Goffinet)	AY908065	-	HM751555
Eulacophyllum cultelliforme	Allen 18241 (MO)	AY908197	AY908752	HM751688
Euptychium robustum	Streimann 56137 (NY)	AY306907	AY452352	AY452434
Eurhynchiella acanthophylla	Taylor 11048 (NY)	AY908299	AY908503	HM751304
Eurhynchiium hians	Bachmann 327(DUKE)	AY908314	AY908513	HM751315
Eurohypnum leptothallum	Yamaguchi 132 (MO)	AY908203	AY908443	HM751455
Eustichia longirostris	Goffinet 7091 (herb. Goffinet)	AY908091	AY908930	-
Exodictyon diatatum	Newton & Bell 5305 (herb. Goffinet)	AY908149	AY908875	HM751619
Fabronia pusilla	Hedderson 9230 (RNG)	AY908199	AY908754	HM751250
Fauriella tenuis	He & Song 00327 (MO)	AY908233	AY908545	HM751394
Felipponea montevidensis	Wasum & Jasper 8207(MO)	AY908576	AY908714	HM751265
Fissidens subbasilaris	Goffinet 5263 (herb. Goffinet)	AF223056	AY312877	AY330435
Fleischerobryum longicolle	Deguchi 158 (MO)	AY907989	AY908383	HM751525
Floribundaria aurea	Mizutani 15715 (MO)	AY306910	AY908724	HM751493
Flowersia campylopus	Cardenas 4369 (MO)	AY907988	AY908788	-
Fontinalis antipyretica	Hedderson 11849 (RNG)	AF023817	AY908494	HM751502
Foreauella orthotheca	Redfearn, et al. 34244 (NY)	AY908560	AY908461	HM751372
Forsstroemia trichomitria	Anderson 27401 (DUKE)	AY908263	AY908650	HM751469
Funaria hygrometrica	Cox s.n. (RNG)	AF023776	Z98959	AY330436
Funariella curviseta	Townsend 89/235 (E)	AY908157	AY908791	-
Gangulelea angulosa	Vital & Buck 20053 (NY)	AY908068	AY908970	HM751713
Garckea phascoides	Magill & Pocs 11583 (MO)	AY908096	AY908870	HM751611
Garovaglia elegans	Hoffman 89-476 (NY)	AY306915	AY452356	AY452437
Gigaspermum repens	Schofield 90527 (DUKE)	AF223049	AY908974	HM751701
Glyphomitrium daviesii	Buck 14830 (NY)	AY908082	AY908895	HM751639
Glyphothecium sciuroides	Streimann 59969 (NY)	AY306919	AY452359	HM751685
Gollania cylindricarpa	Shevock 17911 (MO)	AY908324	AY908391	HM751401
Goniobryum subbasilare	Cox & Goffinet 63/00 (DUKE)	AY907999	AY908775	HM751238
Goniomitrium acuminatum	Streimann 48855 (H)	-	AY908820	HM751533
Gradsteinia andicola	Cleef 8236 (NY)	AY908246	AY908420	HM751416
Grimmia plagiopodia	Buck 39823 (NY)	AY908144	AY908919	HM751606
Groutiella tomentosa	Allen 18062 (MO)	AY908001	AY908943	-
Gymnostomiella vernicosa	Long 28119 (DUKE)	AY908066	AY908837	HM751572

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Gymnostomum aeruginosum	Zander 4218 (BUF)	AY908050	AY908847	HM751550
Gyroweisia tenuis	Long 16061 (DUKE)	AY908062	AY908834	HM751556
Habrodon perpusillus	Hedderson 9443 21/5/91 (RNG)	AY908293	AY908683	HM751261
Hamatocaulis vernicosus	Schofield et al 99535 (MO)	AY908251	AY908434	HM751268
Hampeella pallens	Streimann 44664 (NY)	AY906921	AY452360	AY452439
Handeliobryum sikkimense	Redfearn et al. 33980 (MO)	AY908267	AY908672	HM751459
Haplocladium virginianum	Buck 32482 (NY)	AF143040	AY908401	HM751283
Haplohymenium triste	Goffinet 6484 (DUKE)	AY908202	AY908458	-
Hedwigia ciliata	Hedderson 11771 (RNG)	AJ251309	AY908380	AY330438
Hedwigidium integrifolium	Price et al. 1527 (MO)	AY907993	AY908379	HM751665
Helicodontium capillare	Buck 29550 (NY)	AF143043	AY908516	HM751319
Helicophyllum torquatum	Newton 4813 13/3/99 (herb. Newton)	AF265357	AY908385	-
Helodium blandowii	Shevock 18635 (MO)	AY908339	AY908393	HM751287
Hemiragis aurea	Dauphin 2949 (NY)	AY306922	AY452361	AY452440
Henicodidium geniculatum	Newton 4689 (herb. Newton)	AY908563	AY908691	HM751442
Herpetineuron toccae	Buck 39973 (NY)	AY908566	AY908638	HM751292
Herzogiella adscendens	Schofield 108033 (MO)	AY908557	AY908404	-
Heterocladium dimorphum	Shevock 19252 (MO)	AY908259	AY908640	HM751463
Heterophyllum affine	Buck 21676 (NY)	AY908577	AY908466	HM751386
Hildebrandtiella endotrichelloides	Magill & Pocs 11732 (MO)	AY306925	AY908702	-
Hilpertia velenovsky	Pocs, et al. 8-9 July 1997] (NY)	AY908026	-	HM751530
Himantocladium cyclophyllum	Jordan s.n.(CONN)	AY908268	AY908472	HM751457
Holomitriopsis laevifolia	Leisner 23093 (DUKE)	AY908135	AY908915	HM751591
Holomitrium arboreum	Churchill et al. 20417 (MO)	AY908109	AY908881	HM751629
Homalia trichomanoides	Schofield 96279 (MO)	AY908276	AY908673	HM751353
Homaliadelphus targionianus	Allen 6752 (MO)	AY908552	AY908449	HM751428
Homaliodendron flabellatum	Allen 12674 (MO)	AY908271	AY908671	HM751358
Homalotheciella subcapillata	Buck 332517 (NY)	AF143061	AY908510	HM751318
Homalothecium sericeum	Magill 10071 (MO)	AY908313	AY908521	HM751322
Homomallium adnatum	Allen 22258 (MO)	AY908554	AY908387	HM751423
Hondaella brachytheciella	Redfearn et al. 36112 March 27 1990 (MO)	AY908579	AY908741	HM751450
Hookeria lucens	Cox 118 (RNG)	AY306930	AY908489	AY330439
Hookeriopsis cuspidata	Allen 19061 (MO)	AY908608	AY908456	HM751240
Horikawaea redfearnii	Tan & Gruezo 92-379 (NY)	AY908600	AY908704	HM751432
Horridohypnum mexicanum	Delgadillo 6149 (MO)	AY908349	AY908630	HM751449
Hydropogon fontinaloides	Allen Font. Exs. 54 (DUKE)	AY908216	AY908535	HM751382
Hygroamblystegium varium	Buck 32563 (NY)	AY908247	AY908429	HM751418
Hygrodicranum boliviana	Buck 39497 (DUKE)	AY908115	AY908904	HM751649
Hygrohypnum smithii	Goffinet 7968 (CONN)	AY908620	AY908985	HM751719
Hylocomiastrum pyrenaicum	Schofield 101919 (MO)	AY908181	AY908644	HM751350
Hylocomiopsis cylindricarpa	Pocs 6177 (NY)	AY908342	AY908394	-
Hylocomium splendens	Schofield 98369 (DUKE)	AY908280	AY908447	HM751348
Hymenodon pilifer	Streimann 58994 (MO)	AY908176	AY908778	HM751690
Hymenodontopsis stressmannii	Iserentant R. 865 Jan 9 1990 (MO)	AY907995	-	HM751671
Hymenolomopsis toluensis	Delgadillo 4617, 7/26/83 (DUKE)	AY908079	AY908858	HM751558
Hymenostylium recurvirostre	Bachmann 538 (DUKE)	AY908121	AY908859	HM751560
Hyocomium armoricum	Schwartz 2049 (MO)	AY907955	AY908533	HM751483
Hyophila involuta	Bann & Sarwar (BUF)	AF480948	-	-
Hyophiladelphus agrarius	Bowers & LeLong 15446 (DUKE)	AY908067	AY908838	HM751568
Hypnella diversifolia	Buck 39277 (NY)	AY306931	AY452364	AY452443
Hypnobartlettia fontana	Frahm 1998 (MO)	AY908245	AY908428	HM751414
Hypnodendron microstictum	Crosby 16261 (DUKE)	AY908008	AY908771	HM751668
Hypnodontopsis spathulatus	Murata et al. 22245 (CONN)	AY908119	AY908964	HM751695
Hypnum cupressiforme	Cox 599 (DUKE)	AF469845	AY908444	HM751456
Hypodontium dregei	Arts 105/05 (DUKE)	AY908112	AY908877	HM751608
Hypopterygium tamarisci	Buck 35314 (NY)	AY449666	AY452367	AY452446
Indusiella thianshanica	Long 26986 (DUKE)	AY908139	AY908923	HM751601
Ischyrodon leptura	Streimann 54790 (MO)	AY908591	AY908755	HM751251
Isocladiella surcularis	Shaefer-Verwimp & Verwimp 21005 (NY)	AY908204	AY908467	HM751388
Isodrepanium lentulum	Allen 23460 (MO)	AY907964	AY908530	-
Isopterygiopsis muelleriana	Buck 25170 (NY)	AY908322	AY908764	HM751252
Isopterygium tenerum	Buck 33462 (NY)	AF143037	AY908546	HM751395
Isothecium myosuroides	Schofield 105739 (NY)	AY306933	AY908661	HM751471
Iwatsukiella leucotricha	Schofield 98995 (MO)	AY908583	AY908740	HM751427
Jaegerina scariosa	Goffinet 6144 (herb. Goffinet)	AY908601	AY908462	HM751433
Jaffueliobryum latifolium	Long 23992 (DUKE)	AY908617	AY908950	HM751699

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Jonesiobryum cerradense	Yano 4677 (NY)	AY908120	AY908901	HM751644
Juratzkaeella sinensis	Magill 7662 (MO)	AY908198	AY908751	HM751245
Kiaeria gracilis	Long 30073 (E)	AY908085	AY908900	HM751633
Leiomela bartramioides	Goffinet 6428 (herb. Goffinet)	AY907991	AY908969	HM751523
Leiomitrium plicatum	Arts (1120:nad5) (1121: rps4) (herb. Goffinet)	AY908003	AY908939	X? AY621535
Lembophyllum divulsum	Streimann 58549 (MO)	AY306935	AY908656	HM751474
Lepidopilidium portoricense	Buck 37825 (NY)	AY306939	AY452369	AY452448
Lepidopilum scabrisetum	Buck 39436 (NY)	AY306940	AY452370	AY452449
Leptobarbula berica	Long 15819 (DUKE)	AY908063	AY908835	HM751557
Leptobryum pyriforme	Allen 19666, 8/1/97 (DUKE)	AF023802	-	-
Leptodictyum riparium	Parfitt 5903 (MO)	AY907967	AY908713	HM751345
Leptodon smithii	Rumsey s.n. (herb. Rumsey)	AY908261	AY908641	HM751467
Leptodontopsis fragilifolia	Pocs 9225/AZ (herb. Goffinet)	AY908170	AY908947	HM751661
Leptodontium luteum	Churchill 19048 (BUF)	AY908045	AY908841	HM751545
Leptohymenium tenue	Redfearn, He, & Su 799a (NY)	AY908581	AY908389	HM751403
Leptopterigynandrum austro-alpinum	Churchill et al. 19933 (MO)	AY908190	AY908744	-
Leptostomum inclinans	Streimann 47937 (DUKE)	AY907974	AY908359	HM751692
Leptotheca boliviana	Cox 58/01 (DUKE)	AY908177	AY908779	-
Leptotheca gaudichaudii	Cox & Goffinet 459/00 (DUKE)	AY907994	AY908781	HM751239
Lepyrodium tormentosum	DeLuna & Keller 2246 (herb. DeLuna)	AY908585	AY908748	HM751248
Lepyrodontopsis trichophylla	Newton 4537 (herb. Newton)	AY907965	AY908531	HM751478
Lescurea radicata	Whittemore 5372 (NY)	AY908326	AY908737	HM751341
Leskea gracilescens	Buck 30102 (NY)	AY908343	-	HM751284
Leskeadelphus bolivianus	Churchill 17611 (MO)	AY907948	AY908411	HM751274
Leskeella nervosa	Allen 21504A (NY)	AY908325	AY908414	HM751277
Leskeodon auratus	Buck 18286 (NY)	AY306942	AY452371	AY452450
Leucobryum crispum	Buck 39451 (DUKE)	AY908134	AY908914	HM751592
Leucodon sciuroides	Hedderson 8852 (RNG)	AY908186	AY908716	HM751266
Leucolepis acanthoneura	Newton s.n. 3/Aug/96 (herb. Newton)	AY907979	AY908366	-
Leucoloma sprengeianum	Arts RSA 104/09 (DUKE)	AY908110	AY908889	HM751650
Leucomium strumosum	Holz FG 00-268 (NY)	AY306943	AY908488	AY452452
Leucophanes mayottense	Magill & Pocs 11359, 8/15/92 (DUKE)	AY908150	-	HM751621
Lievierella fabroniaceae	Magill 10833 (MO)	AY907961	AY908528	HM751282
Limbella tricosta	Schofield & Belland 88077 (DUKE)	AY908572	AY908441	HM751357
Lindbergia brachyptera	Allen 10907 (MO)	AY907949	AY908412	HM751276
Lindigia aciculata	Churchill et al. 16292 (DUKE)	AY908304	AY908512	HM751311
Loeskeobryum brevirostre	Buck 32522 (NY)	AY908278	AY908635	HM751371
Loeskypnum badium	Schofield 111164 (MO)	AY907969	AY908712	HM751343
Lopidium concinnum	Holz & Franzaring 00-123 (herb. Goffinet)	AY908611	-	-
Lorentziella imbricata	Schinini 24785 (NY)	AF223052	AY908973	-
Luisierella barbula	Nash 313 (herb. Goffinet)	AY908155	AY908975	-
Lyellia crispa	Long 22956 (DUKE)	AY908020	AY908801	HM751511
Macrocoma tenue	Arts 04/04 (herb. Goffinet)	AY908004	AY908940	HM751658
Macromitrium laevatum	Pocs & al. 88110/BC (RNG)	AY908002	AY908944	-
Macrothamnium macrocarpum	Shevock 14459 (MO)	AY908182	AY908390	HM751402
Mahua enervis	Slack s.n. (NY)	AY908319	AY908761	HM751255
Mastopoma subpiliferum	Akiyama Th-2 (NY)	AY908224	AY908486	HM751389
Matteria gracillima	Goffinet 7197a (herb. Goffinet)	AY907947	AY908621	AY621537
Meesia triquetra	Schofield 99251A (DUKE)	AY499647	AY908977	HM751327
Meiothecium chlorocladum	Heras 286/94 (NY)	AY908217	AY908483	HM751379
Meiotrichum lyellii	Norris 78644 (NY)	AY908012	AY908802	HM751514
Mesochaete undulata	Edwards, Sn. (BM)	AY907996	-	HM751373
Mesonodon flavescens	Kolema 132 20 (NY)	AY908255	AY908529	HM751281
Mesotus celatus	Streimann 58236 (NY)	AY908105	AY908888	-
Metaneckera menziesii	Schofield 105417 (DUKE)	AY908264	AY908648	HM751464
Meteoridium remotifolium	Allen 20563 (MO)	AY306949	AY908517	HM751334
Meteoriella soluta	Shevock 14337 (MO)	AY306950	AY908637	HM751368
Meteoriopsis reclinata	Shevock 17996 (MO)	AY908283	AY908726	HM751488
Meteorium illecebrum	Newton 4288 (herb. Newton)	AY908187	AY908733	HM751496
Microbryum dallavianum	Eckel & Zander 9104014 (NY)	AY908033	AY908825	HM751710
Microcampylopus leucogaster	Lyon 137A (MO)	AY908136	AY908908	HM751594
Micromitrium austinii	Buck 24917 (DUKE)	AY908093	AY908917	-
Mielichhoferia elongata	Shaw s.n. (RNG)	AF023793	AY312878	AY330440
Mittenothamnium reptans	Allen 18674 (MO)	AY908346	AY908627	-
Mitthyridium constrictum	Withey 560 (DUKE)	AF306987	AY908976	HM751620
Mniomalia semilimbata	Hoffmann 89-685 (NY)	AY907986	AY908373	HM751669

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Mnium hornum	Cox 115 (RNG)	AF023796	AY312879	AY330441
Molendoa sendtneriana	Dall' Aglio 428 (BUF)	AY908053	AY908846	HM751552
Muelleriella crassifolia	Ochyra 367 (80) Exs. 16 (DUKE)	AY908171	-	-
Muellerobryum whiteleggei	Newton & Bell 5462 (herb. Newton)	AY908602	AY908688	HM751436
Muscoflorschuetzia pilmaiquen	Isotype (H)	AF306960	-	-
Myurella tenerrima	Schofield et al. 97975 (DUKE)	AF460822	AY908758	HM751253
Myurium hockstetteri	Rumsey 17/7 (herb. Rumsey)	AY908180	AY908439	HM751481
Myuroclada maximoviczii	Shevock 16232 (MO)	AY908309	AY908526	HM751331
Neckera pennata	Anderson 26335 (DUKE)	AY908265	AY908652	HM751465
Neckeropsis disticha	Buck 33041 (NY)	AF143010	AY908675	HM751458
Neobarbella comes	Yung-ge 3417 (MO)	AY306954	AY908664	-
Neodiciadiella pendula	Shevock 18116 (MO)	AY908284	AY908727	HM751498
Neodolichomitria yunnanensis	Shevock 17903 (MO)	AY908297	AY908506	HM751305
Neolindbergia cladonioides	Akiyama 24232 (NY)	AY908194	AY908442	HM751444
Neomeesia paludella	Goffinet 5862 (herb. Goffinet)	AF306993	AY908984	HM751722
Neonoguchia auriculata	Lin 12616A 24 Dec 1985 (NY)	-	-	HM751299
Neorutenbergia usagarae	Pocs et al. 88110/A (NY)	AF143019	AY908631	HM751258
Noguchiodendron sphaerocarpum	Akiyama Th-112 (HYO)	AY907958	AY908464	HM751721
Notoligotrichum australe	Streimann 51321 (MO)	AY908017	AY908803	HM751517
Ochrobryum gardneri	Allen 13706 (MO)	AY908138	AY908916	HM751609
Octoblepharum albidum	Goffinet 2631 (herb. Goffinet)	AY908154	-	HM751623
Oediciadium doii	Glime 4502 23 (NY)	AY908592	AY908738	-
Oedipodium griffithianum	Schofield 98670 (DUKE)	AF306968	AY312880	AY330442
Okamuraea hakoniensis	Yamaguchi 162 (MO)	AY908311	AY908496	-
Oligotrichum parallelum	Schofield 108955 (MO)	AY908014	AY908805	HM751516
Oncophorus wahlenbergii	Schofield 112320 (DUKE)	AY908083	AY908891	HM751640
Oreas martiana	Long 20863 (DUKE)	AY908084	AY908892	HM751636
Oreoweisia laxifolia	Shevock 19097 (MO)	AY908080	AY908898	HM751634
Orthodicranum flagellare	Churchill 19600 (NY)	AY908108	AY908882	HM751627
Orthodontium lineare	Hedderson s.n. (RNG)	AF023800	AY312881	AY330443
Orthodontopsis bardunowii	Ignatov s.n. (DUKE)	AY908178	AY908780	HM751244
Orthomitrium tuberculatum	Crosby 16040 (MO)	AY908172	AY908785	AY621522
Orthomnion elimbatum	Hoffman 90-41 (H)	AY907977	AY908364	HM751682
Orthorrhynchium elegans	Streimann 53758 (NY)	AY908612	AY908766	HM751672
Orthostichella pentasticha	Cardenas 5891 (MO)	AY907962	AY908655	HM751362
Orthostichidium involutifolium	Magill & Crosby 8387 (MO)	AY908195	AY908700	HM751429
Orthostichopsis tetragona	Newton 4616 (herb. Newton)	AY908192	AY908689	HM751439
Orthotheciella varia	Shevock 15238 (NY)	AY908230	AY908430	HM751420
Orthothecium chryseum	Schofield 102114 (MO)	AY907966	AY908759	HM751254
Orthotrichum anomalum	Vitt Orth. Exs. 43 (DUKE)	AF306970	AY908979	AY621525
Osculatia globosum	Allen5604 (H)	AY907972	AY908358	HM751507
Oxyrrhynchium rugosipes	Withey 534 (DUKE)	AY908315	AY908514	HM751316
Palamocladium leskeoides	Churchill 20419 (DUKE)	AY908296	AY908499	HM751310
Palisadula chrysophylla	Buck 9620 (NY)	AY908593	AY908739	HM751460
Paludella squarrosa	Hedderson 11810 (RNG)	AF023810	AY908375	HM751324
Palustriella commutata	Shevock 18521 (MO)	AY908243	AY908421	HM751417
Papillidiopsis complanata	Tan 95-1011 (NY)	AY908220	AY908482	HM751715
Paraleucobryum enerve	Long 16815 (DUKE)	AY908106	AY908883	HM751625
Paranapiacabaea paulista	Vital & Buck 20614 (NY)	AY908218	AY908480	-
Pentastichella pentastichum	Goffinet 5489 (CONN)	AY908167	AY908783	HM751659
Penzigiella cordata	Weber B-99381 (NY)	AY306972	AY908653	HM751479
Philonotis fontana	Cox 117 (RNG)	AF023801	AY908384	HM751526
Philophyllum tenuifolium	Schafer-Verwimp 14548 (NY)	AY306973	AY452376	AY452456
Phyllocladon truncatulus	Buck 33300 (NY)	AY908604	AY908682	HM751356
Phyllocladon falcifolium	Buck 3001 (DUKE)	AF143074	AY908374	HM751670
Phyllogonium fulgens	Newton 4854 (herb. Newton)	AY908193	AY908709	HM751267
Physcomitrella patens	Whitehouse s.n. (UC)	AY908158	AY908932	HM751653
Physcomitrium lorentzii	Goffinet 5348 (DUKE)	AF223046	AY908933	-
Pilopogon gracilis	Breedlove 66830 (MO)	AY908137	AY908907	HM751596
Pilosium chlorophyllum	Buck 32979 (NY)	AF143059	AY908749	HM751246
Pilotrichella flexilis	Newton 4444 (herb. Newton)	AY908332	AY908665	-
Pilotrichidium callicostatum	Betancur et al. 4725 (NY)	AY306977	AY908455	AY452460
Pilotrichopsis dentata	Buck 23843 (NY)	AY908599	AY908715	HM751438
Pilotrichum bipennatum	Holz FG 00-33 10 Sep 2000 (NY)	AY306976	AY452378	AY452459
Pinnatella piniformis	Allen 23700 (DUKE)	AY907963	AY908654	HM751363
Pirella angustifolia	Goffinet 2889 (DUKE)	AY908565	AY908692	HM751441

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Plagiobryum zierii	Schofield 106269 (MO)	AY907973	AY908355	HM751505
Plagiomnium cuspidatum	Schwab s.n. (DUKE)	AY907978	AY908365	HM751678
Plagiopus oederi	Goffinet 3522 (ALTA)	AY907990	Z98962	HM751521
Plagiothecium cavifolium	Buck 32520 (NY)	AY908321	AY908763	HM751237
Platygyriella aurea	Long 16425 (DUKE)	AY908575	AY908622	HM751399
Platygyrium repens	Buck 33448 (NY)	AY908234	AY908623	HM751393
Platyhybridium riparioides	Allen 22317 (MO)	AY908298	AY908504	HM751307
Platylomella lescurii	Allen 22294 (MO)	AY908337	AY908402	HM751285
Platyneuron laticostatum	Goffinet 8405 (herb. Goffinet)	AY908613	AY908960	-
Pleuridium subulatum	Anderson 27634 (DUKE)	AF306980	AY908952	HM751563
Pleurochaete squarrosa	Goffinet 6453 (herb. Goffinet)	AY908058	AY908854	HM751714
Pleurophascum grandiglobum	Streimann 51183 (NY)	AY908101	AY908961	-
Pleurorthotrichum chilense	Goffinet 5320 (herb. Goffinet)	AY908168	AY908784	HM751660
Pleuroziopsis ruthenica	Schofield 111104 (DUKE)	AY908571	AY908647	HM751425
Pleurozium schreberi	Thornton 35 (DUKE)	AY908281	AY908642	HM751347
Pogonatum brachyphyllum	Buck 31598 15 March 1997 (NY)	-	-	HM751519
Pohlia nutans	Shaw 8586 (DUKE)	AY907983	AY908369	HM751680
Polymoron andinus	Lewis 87608, 7/87 (DUKE)	-	-	HM751648
Polytrichadelphus purpureus	Cox 84/01 (DUKE)	AY330480	AY312883	HM751520
Polytrichastrum alpinum	Ledlie 1066 (MO)	AY908013	AY908807	HM751515
Polytrichum pallidisetum	Goffinet 4581 (herb. Goffinet)	AF306956	AY312884	AY330445
Porothamnium arbusculans	Holz & Franzaring 00-86 (MO)	AY908277	AY908679	HM751364
Porotrichodendron nitidum	Buck 39580 (DUKE)	AY908273	AY908678	HM751365
Porotrichopsis flacca	Churchill & Betancur 17934-C (NY)	AY908275	AY908676	HM751366
Porotrichum longirostre	DeLuna & Newton 2266 (herb. Newton)	AY908274	AY908677	-
Potamium lonchophyllum	Churchill et al 17638 (MO)	AY908221	AY908540	-
Pottia truncata	Long 21805 (DUKE)	AY908122	AY908860	HM751559
Pronodon densus	Churchill et al. 19068 (NY)	AF143076	AY908718	HM751443
Pseudephemerum nitidum	Soldan s.n. (DUKE)	AY908074	AY908856	HM751546
Pseudobraunia californica	Whittmore 3550 (DUKE)	AY908143	AY908787	HM751607
Pseudobryum cinclidioides	Hedderson s.n. (RNG)	AY907980	AY908367	HM751681
Pseudocalliergon angustifolium	Allen 19684 (MO)	AY908242	AY908423	HM751419
Pseudocrossidium aureum	Christy & Pigg 2173B (MO)	AY908034	AY908827	HM751537
Pseudocryphaea domingensis	Newton 4542 (herb. Newton)	AY908188	AY908633	HM751259
Pseudoleskea andina	Buck 39552A (NY)	AY908257	AY908696	HM751293
Pseudoleskeella tectorum	Schofield 94788 (MO)	AY907950	AY908416	HM751279
Pseudoleskeopsis imbricata	Schofield & Ramsay 90971 (DUKE)	AY908582	AY908410	HM751275
Pseudopterobryum tenuicuspis	Si-Min 256 (MO)	AY907959	AY908668	-
Pseudoscleropodium purum	Goffinet 4720 (DUKE)	AF143030	AY908505	HM751303
Pseudospiridentopsis horrida	AveryanovB115 (MO)	AY306981	AY908721	HM751489
Pseudosymblypharis guatemalensis	Allen 18868 (MO)	AY908056	AY908850	-
Pseudotaxiphyllum elegans	Ledlie 262 (MO)	AY908578	AY908753	HM751257
Pseudotrachypus martinicensis	Buck 8207 (NY)	AY306982	AY908729	HM751486
Pseudotrismegistia undulata	Akiyama Th-35 (NY)	AY908618	AY908980	-
Psilopilum cavifolium	Schofield 108367 (MO)	AY908015	AY908808	HM751518
Pterigynandrum filiforme	Schofield & Belland 92748 (MO)	AY908189	AY908757	HM751262
Pterobryella praeinitens	Streimann 56079 (NY)	AF307002	AY908769	-
Pterobryon densum	Linares & Churchill 3649 (NY)	AF143013	AY908693	HM751445
Pterobryopsis stolonacea	Churchill et al 20104 (MO)	AY908595	AY908701	HM751431
Pterogonidium pulchellum	Djan-Chekar 94-23 (NY)	AY908232	AY908487	HM751709
Pterogoniopsis cylindrica	Zardini 5055 (MO)	AY908213	AY908537	HM751380
Pterogonium gracile	Whittmore 6599 (MO)	AY907970	AY908667	HM751337
Pterygoneurum ovatum	Shevock 15251 (MO)	AY908038	AY908818	HM751573
Ptilium crista-castrensis	Long 28250 (E)	AY908282	AY908643	-
Ptychodium plicatum	Paton 2723 (E)	AY908327	AY908735	HM751342
Ptychomitriopsis aloinoides	Retief 1473 22 Mar 1984 (NY)	AY908140	-	HM751599
Ptychomitrium gardneri	Ireland 7038 (PMAE)	AY908616	AY908951	HM751600
Ptychomnion aciculare	Streimann 43623 (NY)	AY306983	AY452380	HM751684
Puiggariopsis aurifolia	Buck 35534 (NY)	AY908348	AY908626	HM751446
Pulchrinodus inflatus	Streimann 51162 (NY)	AY907975	AY908360	HM751686
Pylaisiadelpha tenuirostris	Buck 32500 (NY)	AF143053	AY908547	HM751391
Pylaisiella polyantha	Stebel & Stebel 600/95 (MO)	AY907960	AY908408	-
Pylaisiopsis speciosa	Miehe 14071a (NY)	AY908555	AY908475	HM751704
Pyrrhobryum spiniforme	Newton 4397 (herb. Newton)	AF023832	AY908776	-
Quathlamba debilicostata	Long & Rae 924 (DUKE)	AY908159	AY908792	HM751654
Racomitrium crispipilum	Buck 39718 (DUKE)	AY908146	AY908922	HM751602



(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Racopilum tomentosum	DeLuna 2259 (herb. DeLuna)	AJ251314	AY908770	HM751687
Radulina borbonica	Heras 515/94 (NY)	AY908223	AY908485	-
Rauiella lagoensis	Sidwell, Monroe, & Sagastizado 831 (BM)	AY908340	AY908400	HM751286
Regmatodon declinatus	Magill et al. 7689 (MO)	AY908191	AY908413	HM751278
Reimersia inconspicua	Shevock 15069 Apr 9 1997 (MO)	AY908051	AY908798	HM751551
Renauldia mexicana	Norris 77310 (DUKE)	AY908333	AY908666	HM751461
Rhabdoweisia crispata	Goffinet 4553 (herb. Goffinet)	AF222899	AY908966	HM751638
Rhachithecium papillosum	Pocs & Lye 97123A (herb. Goffinet)	AF306978	AY908963	HM751642
Rhacocarpus purpurascens	Hedderson 11790 (RNG)	AF023815	AY908381	HM751666
Rhacopilopsis trinitensis	Allen 20571 (MO)	AY908225	AY908543	HM751387
Rhaphidium dicranoides	Ramirez et al. 8.339-A (MO)	AY908089	AY908867	HM751582
Rhaphidostichum schwaneckeanum	Hill 27911 (NY)	AY908222	AY908484	-
Rhexophyllum subnigrum	Churchill 19804 (MO)	AY908035	AY908817	HM751538
Rhizofabronia persoonii	Magill & Pocs 11061 (MO)	AY908607	AY908765	HM751691
Rhizogonium lindigii	Linares & Churchill 3999 (H)	AF023826	AY908777	HM751260
Rhizomnium gracile	Schofield 76795 (DUKE)	AY907976	AY908362	HM751674
Rhodobryum giganteum	Longton 5073 (RNG)	AF023789	AY312886	AY330449
Rhynchostegiella capillacea	Allen 11414 (MO)	AY908306	AY908515	HM751312
Rhynchostegiopsis flexuosa	Allen 18710 (NY)	AY449667	AY452383	AY452462
Rhynchostegium serrulatum	Buck 33460 (NY)	AY908301	AY908502	HM751309
Rhytidiadelphus triquetrus	Thornton 20A (DUKE)	AY908279	AY908636	HM751349
Rhytidiopsis robusta	Goffinet 7874 (CONN)	AY908574	AY908465	HM751272
Rhytidium rugosum	Rumsey 1988 (herb. Rumsey)	AY907951	AY908415	-
Rigodiadelphus robustus	Deguchi 164 (MO)	AY908569	AY908736	HM751370
Rigodium toxarion	Newton & DeLuna 4447 (herb. Newton)	AY908331	AY908657	HM751476
Roellia roellii	Schofield & Godfrey 97885 (DUKE)	AY907981	AY908368	HM751677
Rosulabryum albolimbatum	Streimann 57424 (NY)	AY907971	AY908356	HM751506
Rozea pterogonioides	Long 17566 (DUKE)	AY907957	AY908544	HM751400
Rutenbergia madagassa	Magill et al. 9583 (DUKE)	AY908605	AY908632	-
Saelania glaucescens	Hedderson 8339 (NY)	AY908148	AY908924	HM751603
Sanionia orthothecioides	Schofield & Talbot 111743 (MO)	AY908253	AY908436	HM751269
Sauloma tenella	Streimann 59726 (NY)	AY306987	AY452384	AY452464
Schimperobryum splendidissimum	Holz & Franzaring Ch 00-156 (NY)	AY306988	AY452385	AY452465
Schistidium apocarpum	Schofield & Talbot 10363 (DUKE)	AY908145	AY908920	HM751605
Schistomitrium brevi-apiculatum	Koponen 35844 (NY)	AY908133	AY908913	-
Schistostega pennata	<i>rps4</i> :Hedderson s.n.(RNG); <i>nad5</i> :unknown	AF265359	AJ224856	HM751646
Schizymerium bryoides	Hedderson 11713 (RNG)	AY907982	AY908370	HM751679
Schlotheimia torquata	<i>rps4</i> / <i>nad5</i> :Allen 11979 (MO); <i>muc26S</i> :Schofield 98451 (DUKE)	AY908005	AY908935	HM751702
Schoenobryum concavifolium	Zardini et al. 40631 (MO)	AY908580	AY908697	HM751297
Schofieldiella micans	Buck 37073 (NY)	AY908235	AY908624	HM751398
Schroeterella zygodonta	Buck 39478 (NY)	AY908209	AY908478	HM751378
Schwetschkea grateloupia	Magill & Pocs 11670a (MO)	AY908305	AY908509	HM751314
Schwetschkeopsis fabronia	Buck 33461 (NY)	AF143041	AY908743	HM751452
Sclerodontium pallidum	Streimann 61222 (MO)	AY908111	AY908890	HM751651
Scleropodium obtusifolium	Shevock & York 17142 (MO)	AY306989	AY908525	HM751320
Scopelophila cataractae	Shaw & Beer s.n. May 1988 (DUKE)	AY908069	-	-
Scorpidium scorpioides	Shaw 9718 (DUKE)	AY908584	AY908435	HM751270
Scorpiurium deflexifolium	Bab Taza del Jbel Bouhalla s.n. (NY)	AY908300	AY908507	HM751453
Scouleria aquatica	Hedderson 5811 (RNG)	AF023780	AY312887	AY330450
Sehnembryum paraguense	Vitt 21097 (ALTA)	AY908174	AY908936	-
Sematophyllum demissum	Buck 24259 (NY)	AY908214	AY908479	HM751381
Serpotortella chenagonii	Orban 9424/CA (MO)	AY908113	AY908878	-
Sphaerotheciella sphaerocarpa	Long 30637-a (DUKE)	AY908589	AY908698	HM751300
Sphagnum palustre	Long 28667 (DUKE)	AF231892	AY312888	AY330451
Spiridens reinwardtii	Withey 908 (DUKE)	AY908009	AY908772	-
Spiridentopsis longissima	Schafer-Verwimp 13185 (MO)	AY908564	AY908690	HM751440
Splachnobryum obtusum	Buck 29822 (NY)	AF223058	AY908855	HM751565
Squamidium brasiliense	Churchill & Schiavone 19995 (MO)	AY908316	AY908518	HM751332
Steereleus serrulatus	Anderson 27826 (DUKE)	AY908302	AY908500	HM751308
Stegonia latifolia	LaFarge 10-08-90(ALTA)	AY908039	AY908826	HM751529
Stenocarpidiopsis saliciola	Buck 39543 (NY)	AY908307	AY908508	HM751335
Stenodesmus tenuiscuspis	Ramirez 8.328 (MO)	AY908610	AY908453	HM751241
Stenodictyon wrightii	Buck 10014 (NY)	AY306998	AY452386	AY452467
Stereophyllum radiculosum	Zardini 7102 (DUKE)	AF466846	AY908750	-
Stoneobryum mirum	Vanderpoorten 156 (herb. Goffinet)	AY908551	AY908981	-
Streptocalyptra tortelloides	Breedlove & Bourel 67446 (MO)	AY908055	AY908839	HM751571

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
Streptopogon calymeres	Price1733 (MO)	AY908044	AY908813	HM751578
Streptotrichum ramicolom	Churchill et al. 19760 (BUF)	AY908046	-	HM751576
Struckia argentata	Long, 2001 (DUKE)	AY908320	AY908762	HM751256
Symblepharis lindigii	Price 1467 (MO)	AY908076	AY908893	HM751637
Symphiodon imbricatifolius	Schafer-Verwimp 14747 (NY)	AY306999	AY452387	AY452468
Symphysodon longicuspis	Newton & Bell 5367 (herb. Newton)	AY908596	AY908706	HM751437
Symphysodontella cylindricea	Withey 545 (DUKE)	AY908597	AY908707	HM751434
Syntrichia ruralis	Shevock & York 16918 Mar 21 1998 (MO)	AY908043	-	-
Syrrhopodon texanus	Zartman 1375 (DUKE)	AY908153	AY908876	HM751622
Taiwanobryum speciosum	Yamaguchi 86 (MO)	AY908272	AY908669	HM751361
Takakia lepidozoides	Schofield 86563 (DUKE)	AF306950	AY312889	AF197061
Takakia ceratophylla	Schofield 102843(MO)/Long 21421 (DUKE)	AY908023	-	HM751509
Taxiphyloopsis iwatsukii	Deguchi 28253 (NY)	AY908351	AY908432	HM751426
Taxiphyllum diplanatum	Newton, Equihua & DeLuna 4651 (herb. Newton)	AY908350	AY908742	HM751451
Taxithelium planum	Newton et al. 4641 (herb. Newton)	AY908231	AY908549	HM751396
Tayloria splachnoides	DeLuna 209 (DUKE)	AF306965	-	HM751328
Tetraphidopsis pusilla	Fife 11592 (NY)	AY307001	AY452389	AY452470
Tetraphis pellucida	Risk 105858 (DUKE)	AY908021	AY908812	HM751512
Tetraplodon mnioides	Soderstrom s.n. (RNG)	AF023804	AY908376	HM751329
Tetrapterum recurvirostrum	Vital & Buck 12121 (NY)	AY908059	AY908853	HM751567
Tetrastichium fontanum	Dull Bryophyta Exs. Madeira 69 (NY)	AY307000	AY452388	AY452469
Tetrodontium brownianum	Snider & He 3202 (DUKE)	AY908022	AY908809	-
Thamniopsis pendula	Churchill & Lineares 18434 (NY)	AY307003	AY452392	AY452473
Thamnobryum alopecurum	Cox 147 (RNG)	AF023834	AJ291571	HM751367
Thelia lescurii	Buck 32864 (NY)	AF143024	AY908745	HM751454
Theriotia lorifolia	Mitutani 13257 (DUKE)	AF223036	-	HM751508
Thuidiopsis furfurata	Streimann 56057 (NY)	AY908341	AY908397	HM751290
Thuidium delicatulum	Buck 32594 (NY)	AF143039	AY908398	HM751291
Timmia megapolitana	Budke, Jessica & Kekes (CONN)	AY908619	AY908982	HM751718
Timmiella anomala	Weber 1978 (BUF)	AY908163	AY908958	HM751585
Toloxis imponderosa	Buck 39522 (DUKE)	AY908289	AY908732	HM751497
Tomentypnum falcifolium	Shaw 10186 (DUKE)	AY908567	AY908431	-
Tortella humilis	Bachmann 111, 7/29/00 (DUKE)	AY908064	AY908836	HM751570
Tortula subulata	O'Shea s.n. (DUKE)	AY908040	AY908814	HM751531
Touwia ellipticum	Akiyama 22448 (NY)	AY908270	AY908674	HM751359
Trachybryum megaptilum	Shevock & Toren 20090 (MO)	AY908312	AY908522	HM751321
Trachycystis microphylla	Longton & Seki 4522 (RNG)	AY907984	AY908371	-
Trachyloma planifolium	Streimann 7261 (RNG)	AY908606	AY908445	HM751689
Trachyphyllum gastroides	O'Shea M7010a (DUKE)	AY908236	AY908532	HM751397
Trachypodopsis serrulata	Pocs 9150/L (MO)	AY307008	AY908720	HM751490
Trachypus bicolor	Koponen 32098 (RNG)	AY908290	AY908446	HM751495
Trachyxiphium drepanophyllum	Vital & Buck 20012 (NY)	AY307005	AY452394	AY452475
Trematodon longicollis	He & Song 00321 (MO)	AY908087	AY908865	HM751579
Trichodon cylindricus	Vitt 35814 (NY)	AY908125	AY908863	HM751564
Trichosteleum papillosum	Buck 33002 (NY)	AF143056	AY908541	HM751375
Trichostomum tenuirostre	Zander & Eckel, 1996 (BUF)	AY908057	AY908852	HM751569
Tridontium tasmanicum	Streimann 51280 (MO)	AY908048	AY908829	HM751544
Tripterocladium leucocladium	Schofield & Belland 91206 (NY)	AY908334	AY908662	HM751472
Triquetrella californica	Shevock 18920 (BUF)	AY908025	AY908840	HM751542
Tristichium mirabile	Allen 12968 July 18 1992 (MO)	AY908073	-	-
Tuerckheimia valeriana	Holz & Schafer-Verwimp 99-1178 (MO)	AY908052	AY908833	HM751553
Uleastrum paraguensis	Zardini & Aquino 32310 (DUKE)	AY908118	AY908965	HM751643
Ulota phyllantha	Schofield 100736 (DUKE)	AY908173	AY908941	HM751663
Venturiella sinensis	Deguchi, 1996 (MO)	AY908117	AY908868	HM751575
Vesicularia vesicularis	Newton 4552 (herb. Newton)	AY908559	AY908406	HM751406
Vittia pachyloma	Goffinet 5605 (DUKE)	AY908240	AY908463	HM751705
Voitia nivalis	Long 26833 (DUKE)	-	AY908953	HM751694
Warburgiella leucocytus	Shaw 10589 (DUKE)	AY908219	AY908538	HM751385
Wardia hygrometrica	Hedderson 11709 (RNG)	AF023782	AY908880	HM751630
Warnstorfia exannulatus	Schofield 111496 (NY)	AY907968	AY908711	HM751344
Weisiopsis anomala	Shevock 16412 (MO)	AY908070	AY908864	HM751583
Weissia controversa	Bovers 15234 (BUF)	AY908060	AY908849	HM751566
Weymouthia mollis	Streimann 58094 (MO)	AY307013	AY908659	HM751475
Wijkia extenuata	Streimann 61180 (MO)	AY908205	AY908542	HM751390
Wilsoniella karsteniana	Churchill, Gail & Kantak 12519-B (NY)	AY908088	AY908866	HM751580
Zelometeorium patulum	Allen 19462 (MO)	AY307017	AY908520	HM751333

(Table continued)

Taxon	Voucher	<i>rps4</i>	<i>nad5</i>	26S rRNA
<i>Zygodon bartramioides</i>	Goffinet 5476 (DUKE)	AY908169	AY908978	HM751662

**Table S.1:** Taxa, specimen vouchers, and GenBank accession numbers for sequences used in the article. Herbarium abbreviations: ALTA - University of Alberta, Edmonton, Canada; BM - The Natural History Museum, London, UK; BUF - Buffalo Museum of Science, Buffalo, USA; CHR - Landcare Research New Zealand Limited, Christchurch, New Zealand; CONN - University of Connecticut, Storrs, USA; DUKE - Duke University, Durham, USA; E - Royal Botanic Garden Edinburgh, Edinburgh, UK; H - University of Helsinki, Helsinki, Finland; HYO - Museum of Nature and Human Activities, Sanda, Japan; MO - Missouri Botanical Garden, St. Louis, USA; MU - Miami University, Oxford, USA; MUB - Universidad de Murcia, MURCIA, Spain; NY - New York Botanical Garden, New York, USA; PMAE - Royal Alberta Museum, Edmonton, Canada; RNG - Reading University, Reading, UK; UC - University of California, Berkeley, USA. <sup>a</sup> chloroplast ribosomal small protein 4, <sup>b</sup> the intron and partial gene sequences of the mitochondrial small subunit 5, <sup>c</sup> partial sequences of the nuclear 26S ribosomal RNA.