

Supplementary Material S1

Plant material studied. ¹Jones and Clements (2002), with revisions from Jones (2015), Clements & Jones (2016), and Jones & Clements (2017). *GenBank accession numbers of previously published DNA sequences. Herbarium acronyms: CANB, Australian National Herbarium; CHR: Allan Herbarium; CNS: Australian Tropical Herbarium; NSW: National Herbarium of New South Wales.

							ancestral
Species	<i>Pterostylis</i> sections <i>sensu</i> Janes & Duretto (2010)	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	range analysis
Pterostylidinae							
<i>Achlydosa glandulosa</i> (Schltr.) M.A.Clem. & D.L.Jones	n/a	<i>Achlydosa glandulosa</i> (Schltr.) M.A.Clem. & D.L.Jones	M.A.Clements 11237 (CANB 950931.1)	G03414	this study	this study	0
<i>Pterostylis abrupta</i> D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium abruptum</i> (D.L.Jones) D.L.Jones & M.A.Clem	T.N.Hayashi 65 (CANB)	G04979	this study	this study	1
<i>Pterostylis aciculiformis</i> (Nicholls) M.A.Clem. & D.L.Jones	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus aciculiformis</i> (Nicholls) Szlach.	G.Bradburn 40 (CANB 892536.1)	G05943	this study	this study	1
<i>Pterostylis acuminata</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis acuminata</i> R.Br.	M.A.Clements 12014 (CANB 909845.1)	G03411	this study	-	1
<i>Pterostylis aestiva</i> D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium aestivum</i> (D.L.Jones) D.L.Jones & M.A.Clem.	T.N.Hayashi 45 (CANB)	G05019	this study	this study	1
<i>Pterostylis</i> aff. <i>graminea</i> "Kauri"	<i>Pterostylis</i> R.Br.	<i>Pterostylis</i> aff. <i>graminea</i> "Kauri"	B.P.J.Molloy 124/99 (CHR 531784)	G03985	this study	-	1
<i>Pterostylis agathicola</i> D.L.Jones, Molloy & M.A.Clem.	<i>Pterostylis</i> R.Br.	<i>Pterostylis agathicola</i> D.L.Jones, Molloy & M.A.Clem.	P.J.deLange 3903 & R.O.Gardner 082/99 (CHR 518307)	G06188	this study	-	1
<i>Pterostylis allantoidea</i> R.S.Rogers	<i>Foliosae</i> G.Don	<i>Diplodium allantoideum</i> (R.S.Rogers) D.L.Jones & M.A.Clem.	M.A.Clements 10891a (CANB 644580.1)	G06192	this study	this study	1
<i>Pterostylis alpina</i> R.S.Rogers	<i>Pterostylis</i> R.Br.	<i>Pterostylis alpina</i> R.S.Rogers	ORG7428 (CANB 950938.1)	G05940	this study	this study	1
<i>Pterostylis aneba</i> D.L.Jones	<i>Pterostylis</i> R.Br.	<i>Pterostylis aneba</i> R.S.Rogers	P. Branwhite 392 (CANB 950935.1)	G03408	this study	this study	1
<i>Pterostylis arenicola</i> M.A.Clem. & J.Stewart	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus arenicola</i> (M.A.Clem. & J.Stewart) Szlach.	M.Young 29 (CANB 950922.1)	G05951	this study	-	1
<i>Pterostylis aspera</i> D.L.Jones & M.A.Clem.	<i>Foliosae</i> G.Don	<i>Diplodium asperum</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	C.J.French 6115 (CANB 666990.1)	G06194	this study	this study	1
<i>Pterostylis atrans</i> D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium atrans</i> (D.L.Jones) D.L.Jones & M.A.Clem.	T.N.Hayashi 38 (CANB)	G04407	this study	this study	1
<i>Pterostylis atosanguinea</i> (D.L.Jones & C.J.French) D.L.Jones & C.J.French	<i>Urochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Urochilus atosanguineus</i> D.L.Jones & C.J.French	C.J.French 6120 (CANB 666994.1)	G06186	-	this study	0
<i>Pterostylis banksii</i> R.Br. ex A.Cunn.	<i>Pterostylis</i> R.Br.	<i>Pterostylis banksii</i> A.Cunn.	W.Parr 087/99 (CHR 518312)	G04072	this study	-	1
<i>Pterostylis baptistii</i> Fitzg.	<i>Pterostylis</i> R.Br.	<i>Pterostylis baptistii</i> Fitzg.	R.Crane 2088 (CANB 665689.1)	G04034	this study	-	1
<i>Pterostylis barbata</i> Lindl.	<i>Catochilus</i> Benth.	M.A.Clements 11966B (CANB <i>Plumatichilos barbata</i> Szlach.	891201.1)	G01354	this study	this study	1

Supplementary Material

Species	<i>Pterostylis</i> sections <i>sensu</i> Janes & Duretto (2010)	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Pterostylis bicornis</i> D.L.Jones & M.A.Clem.	<i>Parviflorae</i> (Bent.) Janes & Duretto	<i>Petrorchis bicornis</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	B.Dalyell ORG 4865 (CANB 673100.1)	G06427	this study	this study	1
<i>Pterostylis boormanii</i> Rupp	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus boormanii</i> (Rupp) Szlach.	T.N.Hayashi 112 (CANB 950907.1)	G05972	this study	this study	1
<i>Pterostylis brumalis</i> L.B.Moore	<i>Foliosae</i> G.Don	<i>Diplodium brumale</i> (L.B.Moore) D.L.Jones, Molloy & M.A.Clem.	N.Pullman 078/99 (CHR 518302)	G06189	this study	this study	1
<i>Pterostylis bryophila</i> D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium bryophilum</i> (D.L.Jones) D.L.Jones & M.A.Clem.	D.E.Murfet 1772 (CANB 676620.1)	G06413	this study	this study	1
<i>Pterostylis bureaviana</i> Schltr.	<i>Pterostylis</i> R.Br.	<i>Pterostylis bureaviana</i> Schltr.	M.A.Clements 11225 (CANB 664441.1)	G06209	this study	-	1
<i>Pterostylis bureaviana</i> Schltr.	<i>Pterostylis</i> R.Br.	<i>Pterostylis bureaviana</i> Schltr.	M.A.Clements 11180 (CANB 664439.1)	G06191	this study	this study	0
<i>Pterostylis chlorogramma</i> D.L.Jones & M.A.Clem.	<i>Squamatae</i> G.Don	<i>Bunochilus chlorogrammus</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	T.N.Hayashi 97 (CANB 891065.1)	G05969	this study	this study	1
<i>Pterostylis cobarensis</i> M.A.Clem.	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus cobarensis</i> (M.A.Clem.) Szlach.	G.Bradburn 27B (CANB 950910.1)	G05946	this study	this study	1
<i>Pterostylis coccinea</i> Fitzg.	<i>Foliosae</i> G.Don	<i>Diplodium coccinum</i> (Fitzg.) D.L.Jones & M.A.Clem.	G.Bradburn 11 (CANB)	G04998	this study	this study	1
<i>Pterostylis collina</i> (Rupp) M.A.Clem. & D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium collinum</i> (Rupp) M.A.Clem. & D.L.Jones	M.A.Clements 12419 (CANB)	G06196	this study	this study	1
<i>Pterostylis concava</i> D.L.Jones & M.A.Clem.	<i>Urochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Urochilus concavus</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	C.J.French 6119 (CANB 666993.1)	G06212	this study	this study	1
<i>Pterostylis concinna</i> R.Br.	<i>Foliosae</i> G.Don	<i>Diplodium concinnum</i> (R.Br.) M.A.Clem. & D.L.Jones	M.A.Clements 12408 (CANB)	G06197	this study	this study	1
<i>Pterostylis crassicaulis</i> (D.L.Jones & M.A.Clem.) G.N.Backh.	<i>Hymenochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Hymenochilus crassicaulis</i> D.L.Jones & M.A.Clem.	M.A.Clements 12333 (CANB 950934.1) R.Mawson ORG5141 (CANB 677099.1)	G05968 G06211	this study	this study	1
<i>Pterostylis cucullata</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis cucullata</i> R.Br.	ORG7345 (CANB 950929.1)	G05071	-	this study	0
<i>Pterostylis curta</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis curta</i> R.Br.	R.Crane 2042 (CANB 665695.1)	G03412	this study	this study	1
<i>Pterostylis curta</i> R.Br.	<i>Hymenochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Pterostylis curta</i> R.Br.					
<i>Pterostylis cycnocephala</i> Fitzg.	<i>Pharochilum</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Hymenochilus cymbellus</i> Jones ined.	M.A.Clements 11916 (CANB 906118.1)	G02745	this study	this study	1
<i>Pterostylis daintreana</i> F.Muell. ex Benth.	<i>Pharochilum</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Pharochilum daintreanum</i> (Benth.) D.L.Jones & M.A.Clem	T.N.Hayashi 76 (CANB 950936.1)	G05043	this study	this study	1

Species	<i>Pterostylis</i> sections <i>sensu</i> Janes & Duretto (2010)	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Pterostylis decurva</i> R.S.Rogers	<i>Foliosae</i> G.Don	<i>Diplodium decurvum</i> (R.S.Rogers) D.L.Jones & M.A.Clem.	M.A.Clements 10744 (CANB 664394.1)	G05977	this study	this study	1
<i>Pterostylis dilatata</i> A.S.George	<i>Foliosae</i> G.Don	<i>Diplodium dilatatum</i> (A.S.George) D.L.Jones & M.A.Clem.	C.J.French 6116 (CANB 666991.1)	G06193	this study	this study	1
<i>Pterostylis dolichochila</i> D.L.Jones & M.A.Clem.	<i>Foliosae</i> G.Don	<i>Diplodium dolichochilum</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	M.A.Clements 11922 (CANB 909820.1)	G05959	this study	this study	1
<i>Pterostylis dubia</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis dubia</i> R.Br.	M.A.Clements 11158 (CANB 681498.1)	G06185	this study	this study	1
<i>Pterostylis ectypha</i> (D.L.Jones & C.J.French) D.L.Jones & C.J.French	<i>Foliosae</i> G.Don	<i>Diplodium ectyphum</i> D.L.Jones & C.J.French <i>Diplodium elegans</i> (D.L.Jones) D.L.Jones & M.A.Clem.	C.J.French 1570 (CANB 624821.1) T.N.Hayashi 72 (CANB)	G02787 G05029	this study this study	this study this study	1 1
<i>Pterostylis elegans</i> D.L.Jones	<i>Foliosae</i> G.Don						
<i>Pterostylis erecta</i> T.E.Hunt	<i>Pterostylis</i> R.Br.	<i>Pterostylis erecta</i> T.E.Hunt	M.A.Clements 11512 (CANB 882081.1)	G06198	this study	this study	1
<i>Pterostylis erythroconcha</i> M.A.Clem. & D.L.Jones	<i>Foliosae</i> G.Don <i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Diplodium erythroconchum</i> (M.A.Clem. & D.L.Jones) D.L.Jones & M.A.Clem. <i>Oligochaetochilus excelsus</i> (M.A.Clem.) Szlach.	M.Young 17 (CANB 950923.1) M.A.Clements 11889 (CANB 950919.1)	G05942 G02748	this study this study	this study this study	1 1
<i>Pterostylis excelsa</i> M.A.Clem. <i>Pterostylis falcata</i> R.S.Rogers	<i>Pterostylis</i> R.Br.	<i>Pterostylis falcata</i> R.S.Rogers	T.N.Hayashi 25 (CANB 950906.1)	G04423	this study	this study	1
<i>Pterostylis foliacea</i> (D.L.Jones) D.L.Jones	<i>Catochilus</i> Benth.	<i>Phumatichilos foliaceus</i> D.L.Jones	M.A.Clements 11896 (CANB 906103.1)	G02746	this study	this study	1
<i>Pterostylis foliata</i> Hook.f.	<i>Pterostylis</i> R.Br. <i>Parviflorae</i> (Bent.) Janes & Duretto	<i>Pterostylis gracilis</i> Nicholls <i>Speculantha furva</i> D.L.Jones	M.A.Clements 11797 (CANB 906077.1) T.N.Hayashi 54 (CANB 950913.1)	G06207 G05034	this study this study	this study this study	1 1
<i>Pterostylis furva</i> (D.L.Jones) D.L.Jones	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto						
<i>Pterostylis gibbosa</i> R.Br.		<i>Oligochaetochilus gibbosus</i> (R.Br.) Szlach. <i>Diplodium grandiflorum</i> (R.Br.) D.L.Jones & M.A.Clem	M.A.Clements 11039 (CANB 655142.1) M.A.Clements 12010 (CANB 909841.1)	G01273 G04878	this study this study	this study -	1 1
<i>Pterostylis grandiflora</i> R.Br.	<i>Foliosae</i> G.Don <i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus hamatus</i> (Blackmore & Clemesha) Szlach.	G.Bradburn 25 (CANB 950909.1)	G05980	this study	this study	1
<i>Pterostylis hamata</i> Blackmore & Clemesha <i>Pterostylis hildae</i> Nicholls	<i>Pterostylis</i> R.Br.	<i>Pterostylis hildae</i> Nicholls <i>Diplodium laxum</i> (Blackmore) D.L.Jones & M.A.Clem. x <i>revolutum</i> (R.Br.) D.L.Jones & M.A.Clem.	B.Dalyell ORG3471 (CANB 629210.1) M.A.Clements 12093 (CANB) M.A.Clements 12235 & L. Nauheimer (CANB)	G04114 G05996 G05964	this study this study this study	this study this study this study	1 1 1
<i>Pterostylis laxa</i> Blackmore x <i>revoluta</i> R.Br.	<i>Foliosae</i> G.Don <i>Oligochaetochilus</i> (Szlach.) Janes & Duretto						
<i>Pterostylis leptochila</i> M.A.Clem. & D.L.Jones <i>Pterostylis lineata</i> (D.L.Jones) G.N.Backh.	<i>Squamatae</i> G.Don	<i>Oligochaetochilus leptochilus</i> (M.A.Clem. & D.L.Jones) Szlach. <i>Bunochilus lineatus</i> D.L.Jones	D.L.Jones 16514 (CANB 607105.1)	G05978	this study	this study	1

Species	<i>Pterostylis</i> sections <i>sensu</i> Janes & Duretto (2010)	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Pterostylis lingua</i> M.A.Clem.	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus linguus</i> (M.A.Clem.) Szlach.	N.Reiter ORG6356 (CANB)	G06202	this study	this study	1
<i>Pterostylis longifolia</i> R.Br.	<i>Squamatae</i> G.Don	<i>Bunochilus longifolius</i> (R.Br.) D.L.Jones & M.A.Clem.	M.A.Clements 11755 (CANB 751196.1)	G04968	this study	this study	1
<i>Pterostylis major</i> (D.L.Jones) G.N.Backh.	<i>Squamatae</i> G.Don	<i>Bunochilus major</i> D.L.Jones <i>Bunochilus melagrammus</i> (D.L.Jones)	T.N.Hayashi 83 (CANB 891072.1)	G05947	this study	this study	1
<i>Pterostylis melagramma</i> D.L.Jones	<i>Squamatae</i> G.Don	D.L.Jones & M.A.Clem. <i>Diplodium metcalfei</i> (D.L.Jones) D.L.Jones	M.A.Clements 10738 (CANB 664392.1)	G04077	this study	this study	1
<i>Pterostylis metcalfei</i> D.L.Jones	<i>Foliosae</i> G.Don <i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	& M.A.Clem. <i>Oligochaetochilus mitchellii</i> (Lindl.) Szlach.	T.N.Hayashi 82 (CANB)	G05979	this study	this study	1
<i>Pterostylis mitchellii</i> Lindl.	<i>Pterostylis</i> R.Br.	<i>Pterostylis monticola</i> D.L.Jones	G.Bradburn 24 (CANB 950916.1)	G05953	this study	this study	1
<i>Pterostylis monticola</i> D.L.Jones	<i>Parviflorae</i> (Bent.) Janes & Duretto	<i>Speculanthia multiflora</i> D.L.Jones <i>Diplodium clavigerum</i> (Fitzg.) D.L.Jones & M.A.Clem.	T.N.Hayashi 18 (CANB 950904.1)	G04391	this study	this study	1
<i>Pterostylis multiflora</i> (D.L.Jones) G.N.Backh.	<i>Foliosae</i> G.Don	<i>Speculanthia multiflora</i> D.L.Jones <i>Diplodium clavigerum</i> (Fitzg.) D.L.Jones & M.A.Clem.	T.N.Hayashi 47 (CANB 950905.1)	G05016	this study	this study	1
<i>Pterostylis nana</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis nutans</i> R.Br.	G.Bradburn 49 (CANB 950915.1)	G06206	this study	this study	1
<i>Pterostylis nutans</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis hispidula</i> Fitzg. <i>Diplodium obtusum</i> (R.Br.) D.L.Jones & M.A.Clem.	M.A.Clements 12119 (CANB 906133.1)	G04366	this study	this study	1
<i>Pterostylis obtusa</i> R.Br.	<i>Foliosae</i> G.Don	<i>Pterostylis oreophila</i> Clemesha <i>Diplodium pedoglossum</i> (Fitzg.) M.A.Clem.	K.Schulte 116 (CANB 950908.1)	G00238	this study	this study	0
<i>Pterostylis oreophila</i> Clemesha	<i>Pterostylis</i> R.Br.	<i>Pterostylis oreophila</i> Clemesha <i>Diplodium pedoglossum</i> (Fitzg.) M.A.Clem.	G.Bradburn 14 (CANB)	G05024	this study	this study	1
<i>Pterostylis pedoglossa</i> Fitzg.	<i>Foliosae</i> G.Don	& D.L.Jones	M.A.Clements 12335 (CANB)	G05966	this study	this study	1
<i>Pterostylis pedunculata</i> R.Br.	<i>Pterostylis</i> R.Br.	<i>Pterostylis pedunculata</i> R.Br.	T.N.Hayashi 78 (CANB)	G05044	this study	this study	1
<i>Pterostylis porrecta</i> D.L.Jones, Molloy & M.A.Clem.	<i>Pterostylis</i> R.Br.	<i>Pterostylis porrecta</i> D.L.Jones, Molloy & M.A.Clem.	M.A.Clements 12116 (CANB 950914.1)	G04387	this study	-	1
<i>Pterostylis prasina</i> (D.L.Jones) G.N.Backh.	<i>Squamatae</i> G.Don	<i>Bunochilus prasinus</i> D.L.Jones	P.J.deLange & J.W.D.Sawyer 149/99 (CHR 531809)	G06190	this study	-	1
<i>Pterostylis psammophila</i> (D.L.Jones) R.J.Bates	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus psammophilus</i> D.L.Jones <i>Diplodium pulchellum</i> (Messmer)	T.N.Hayashi 104 (CANB 950927.1)	G05933	this study	this study	1
<i>Pterostylis pulchella</i> Messmer	<i>Foliosae</i> G.Don <i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	D.L.Jones & M.A.Clem. <i>Oligochaetochilus pusillus</i> (R.S.Rogers)	M.Young 22 (CANB 950921.1)	G05967	this study	this study	1
<i>Pterostylis pusilla</i> R.S.Rogers	<i>Foliosae</i> G.Don	<i>Diplodium pyramidalis</i> Lindl.) D.L.Jones & M.A.Clem.	H.M.E. Richards & R. Datodi 617 (CANB 950933.1)	G04872	this study	this study	1
<i>Pterostylis pyramidalis</i> Lindl.	<i>Foliosae</i> G.Don		M.A.Clements 11872 (CANB 950920.1)	G02747	this study	-	1
			M.A.Clements 11940B (CANB 891175.1)	G01115	-	this study	0

Species	<i>Pterostylis</i> sections <i>sensu</i> Janes & Duretto (2010)	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
	<i>Stannorchis</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Stannorchis recurva</i> (Benth.) D.L.Jones & M.A.Clem.	M.A.Clements 11938 (CANB 891173.1)	G01355	this study	this study	1
<i>Pterostylis recurva</i> Benth.							
<i>Pterostylis repanda</i> (M.A.Clem. & D.L.Jones) J.M.H.Shaw	<i>Foliosae</i> G.Don	<i>Diplodium repandum</i> M.A.Clem. & D.L.Jones	D.L.Jones 15577 (CBG 9908875.1)	G04883	this study	this study	1
<i>Pterostylis repanda</i> (M.A.Clem. & D.L.Jones) J.M.H.Shaw	<i>Foliosae</i> G.Don	<i>Diplodium repandum</i> M.A.Clem. & D.L.Jones	M.A.Clements 11213 (CANB 664440.1)	G06210	this study	this study	0
		<i>Diplodium revolutum</i> (R.Br.) D.L.Jones & M.A.Clem.	G.Bradburn 12 (CANB 950911.1)	G04997	this study	this study	1
<i>Pterostylis revoluta</i> R.Br.	<i>Foliosae</i> G.Don						
		<i>Diplodium robustum</i> (R.S.Rogers)	M.A.Clements 11890 (CANB 906098.1)	G03422	this study	this study	1
<i>Pterostylis robusta</i> R.S.Rogers	<i>Foliosae</i> G.Don	D.L.Jones & M.A.Clem.	M.A.Clements 10893b (CANB 644582.1)	G06204	this study	this study	1
<i>Pterostylis roensis</i> M.A.Clem. & D.L.Jones	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus roensis</i> (M.A.Clem. & D.L.Jones) Szlach.					
	<i>Parviflorae</i> (Bent.) Janes						
<i>Pterostylis rubescens</i> (D.L.Jones) G.N.Backh.	& Duretto	<i>Speculantha rubescens</i> D.L.Jones	M.A.Clements 11847 (CANB 906086.1)	G05012	this study	this study	1
	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto						
<i>Pterostylis rufa</i> R.Br.		<i>Oligochaetochilus rufus</i> (R.Br.) Szlach.	D.Herd ORG5019 (CANB 672882.1)	G06187	this study	this study	1
	<i>Urochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto						
<i>Pterostylis sanguinea</i> D.L.Jones & M.A.Clem.		<i>Urochilus sanguineus</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	T.N.Hayashi 100 (CANB 950926.1)	G05945	this study	this study	1
	<i>Urochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto						
<i>Pterostylis sargentii</i> C.R.P.Andrews		<i>Ranorchis sargentii</i> (C.R.P.Andrews) D.L.Jones & M.A.Clem.	M.A.Clements 12308 & L.Nauheimer (CANB 950928.1)	G05973	this study	this study	1
<i>Pterostylis setifera</i> M.A.Clem., Matthias & D.L.Jones	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus setifer</i> (M.A.Clem., Matthias & D.L.Jones) Szlach.	G.Bradburn 27 (CANB 950937.1)	G05938	this study	this study	1
<i>Pterostylis setulosa</i> (D.L.Jones & C.J.French) D.L.Jones & C.J.French	<i>Foliosae</i> G.Don	<i>Diplodium setulosum</i> D.L.Jones & C.J.French	M.A.Clements 10852 (CANB 644541.1)	G04435	this study	this study	1
<i>Pterostylis smaragdina</i> D.L.Jones & M.A.Clem.		<i>Bunochilus smaragdinus</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	T.N.Hayashi 98 (CANB 891075.1)	G05958	this study	this study	1
	<i>Squamatae</i> G.Don						
	<i>Hymenochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto						
<i>Pterostylis</i> spec. ' <i>pisinna</i> '		<i>Hymenochilus pisinnus</i> D.L.Jones ined.	M.Young 10a (CANB 950924.1)	G05970	this study	this study	1
	<i>Hymenochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto						
<i>Pterostylis</i> spec. ' <i>pisinna</i> '		<i>Hymenochilus pisinnus</i> D.L.Jones ined.	M.A.Clements 11920 (CANB 909819.1)	G02754	this study	this study	0
	<i>Parviflorae</i> (Bent.) Janes & Duretto						
<i>Pterostylis</i> spec. ' <i>protera</i> '		<i>Speculantha</i> spec. ' <i>protera</i> '	D.L.Jones ORG 7427 (CANB)	G05963	this study	-	1
	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus squamatus</i> (R.Br.) Szlach.	T.N.Hayashi 30 (CANB)	G04429	this study	this study	1
<i>Pterostylis squamata</i> R.Br.							

Species	<i>Pterostylis</i> sections sensu Janes & Duretto (2010)	Species sensu Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Pterostylis striata</i> Fitzg.	<i>Foliosae</i> G.Don	<i>Diplodium striatum</i> (Fitzg.) D.L.Jones & M.A.Clem.	M.A. Clements 11782 (CANB)	G06214	this study	this study	1
<i>Pterostylis tenuissima</i> Nicholls	<i>Foliosae</i> G.Don	<i>Diplodium tenuissimum</i> (Nicholls) D.L.Jones & M.A.Clem.	M.Duncan ORG 5146 (CANB 677104.1)	G06199	this study	this study	1
<i>Pterostylis terminalis</i> (D.L.Jones & R.J.Bates) J.M.H.Shaw	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus terminalis</i> D.L.Jones & R.J.Bates	M.A.Clements 11866 (CANB 950918.1)	G03417	this study	this study	1
<i>Pterostylis torquata</i> D.L.Jones	<i>Foliosae</i> G.Don	<i>Diplodium torquatum</i> (D.L.Jones) D.L.Jones & M.A.Clem.	T.N.Hayashi 81 (CANB)	G05981	this study	this study	1
<i>Pterostylis truncata</i> Fitzg.	<i>Foliosae</i> G.Don	<i>Diplodium truncatum</i> (Fitzg.) D.L.Jones & M.A.Clem.	G.Bradburn 13 (CANB)	G04996	this study	this study	1
<i>Pterostylis tunstallii</i> D.L.Jones & M.A.Clem.	<i>Squamatae</i> G.Don	<i>Bunochilus tunstallii</i> (D.L.Jones & M.A.Clem.) D.L.Jones & M.A.Clem.	M.A.Clements 11802 (CANB) M.A.Clements 12309 & L. Nauheimer (CANB 950939.1)	G06203	this study	this study	1
<i>Pterostylis turfosa</i> Endl.	<i>Catochilus</i> Benth.	<i>Plumatichilos turfusus</i> (Endl.) Szlach.	J.Whitfield ORG6159 (CANB 755628.1)	G05949	this study	this study	1
<i>Pterostylis valida</i> (Nicholls) D.L.Jones	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus validus</i> (Nicholls) D.L.Jones & M.A.Clem.	755628.1)	G06213	this study	this study	1
<i>Pterostylis venosa</i> Colenso	<i>Pterostylis</i> R.Br.	<i>Pterostylis venosa</i> Colenso	D.L.Jones s/n (CANB 787778.1)	G07751	-	this study	0
<i>Pterostylis ventricosa</i> (D.L.Jones) G.N.Backh.	<i>Parviflorae</i> (Bent.) Janes & Duretto	<i>Speculantha ventricosa</i> D.L.Jones	A.Stephenson ORG7309 (CANB)	G04340	this study	this study	1
<i>Pterostylis vittata</i> Lindl.	<i>Urochilus</i> (D.L.Jones & M.A.Clem.) Janes & Duretto	<i>Urochilus vittatus</i> (Lindl.) D.L.Jones & M.A.Clem.	M.A.Clements 11939 (CANB 891174.1)	G01353	this study	this study	1
<i>Pterostylis williamsonii</i> D.L.Jones	<i>Bunochilus williamsonii</i> (D.L.Jones) D.L.Jones & M.A.Clem.	<i>Bunochilus williamsonii</i> (D.L.Jones) D.L.Jones & M.A.Clem.	M.A.Clements 10779A (CANB 891077.1)	G06218	this study	this study	1
<i>Pterostylis xerophila</i> M.A.Clem.	<i>Oligochaetochilus</i> (Szlach.) Janes & Duretto	<i>Oligochaetochilus xerophilus</i> (M.A.Clem.) Szlach.	M.A.Clements 11595 (CANB 882126.1)	G06201	this study	this study	1
Outgroups							
<i>Adenochilus gracilis</i> Hook.f.		<i>Adenochilus gracilis</i> Hook.f.	B.P.J.Molloy 174/00 (CHR 532785)	G04014	this study	this study	0
<i>Anathallis obovata</i> (Lindl.) Pridgeon & M.W.Chase		<i>Anathallis obovata</i> (Lindl.) Pridgeon & M.W.Chase	GenBank accession	NC043905*	NC043905*	-	0
<i>Aphyllorchis anomala</i> Dockrill		<i>Aphyllorchis anomala</i> Dockrill	K.Schulte 143 (CNS 144311.1)	G00168	this study	-	0
<i>Apostasia wallichii</i> R.Br.		<i>Apostasia stylidioides</i> (F.Muell.) Rehb.f.	K.Schulte 258 (CNS)	G06011	this study	-	0
<i>Calypso bulbosa</i> (L.) Oakes		<i>Calypso bulbosa</i> (L.) Oakes	GenBank accession	NC040980*	NC040980*	-	0
<i>Cheirostylis notialis</i> D.L.Jones		<i>Cheirostylis notialis</i> D.L.Jones	J.Moye ORG6978 (CANB 950940.1)	G03406	this study	-	0
<i>Chloraea gavilu</i> Lindl.		<i>Chloraea gavilu</i> Lindl.	Givnish et al. 2018	Givnish_2018	Givnish 2018	-	0
<i>Chloraea gavilu</i> Lindl.		<i>Chloraea gavilu</i> Lindl.	GenBank accession	FR832121*	-	FR832121*	0
<i>Chloraea multiflora</i> Lindl.		<i>Chloraea multiflora</i> Lindl.	GenBank accession	FR832119*	-	FR832119*	0

Species	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Codonorchis lessonii</i> (d'Urv.) Lindl.	<i>Codonorchis lessonii</i> (d'Urv.) Lindl.	E.Pisano & O.Dollenz 5832 (CANB 950903.1)	G05327	this study	this study	0
<i>Coilochilus neocaledonicum</i> Schltr.	<i>Coilochilus neocaledonicum</i> Schltr.	M.A.Clements 11248 (CANB 950932.1)	G05305	this study	-	0
<i>Cooktownia robertsii</i> D.L.Jones	<i>Cooktownia robertsii</i> D.L.Jones	L.J.Roberts (ORG 2113) (CANB 679460.1)	G06630	this study	-	0
<i>Cypripedium japonicum</i> Thunb.	<i>Cypripedium japonicum</i> Thunb.	GenBank accession	NC027227*	NC027227*	-	0
<i>Danhatchia australis</i> (Hatch) Garay & Christenson	<i>Danhatchia novaehollandiae</i> D.L.Jones & M.A.Clem.	P.H.Weston, W.A.Cherry & J. Stockard 3405 (NSW 870437)	G03415	this study	-	0
<i>Dendrobium aduncum</i> Lindl.	<i>Dendrobium aduncum</i> Lindl.	GenBank accession	NC038077*	NC038077*	-	0
<i>Dendrobium flexicaule</i> Z.H.Tsi, S.C.Sun & L.G.Xu	<i>Dendrobium flexicaule</i> Z.H.Tsi, S.C.Sun & L.G.Xu	GenBank accession	NC038076*	NC038076*	-	0
<i>Disa bracteata</i> Sw.	<i>Disa bracteata</i> Sw.	M.A.Clements & L.Nauheimer 12256 (CANB 906207.1)	G05322	this study	this study	0
<i>Diuris sulphurea</i> R.Br.	<i>Diuris sulphurea</i> R.Br.	M.A.Clements 12053 (CANB 908278.1)	G02433	this study	this study	0
<i>Elleanthus sodiroi</i> Schltr.	<i>Elleanthus sodiroi</i> Schltr.	GenBank accession	NC027266*	NC027266*	-	0
<i>Epipactis palustris</i> (L.) Crantz	<i>Epipactis palustris</i> (L.) Crantz	GenBank accession	NC041187*	NC041187*	-	0
<i>Eucosia umbrosa</i> D.L.Jones & M.A.Clem.	<i>Eucosia umbrosa</i> D.L.Jones & M.A.Clem.	D.L.Jones s.n. (CANB 676421.1)	G06632	this study	-	0
<i>Eucosia viridiflora</i> (Blume) M.C.Pace	<i>Goodyera viridiflora</i> (Blume) Blume	W.K.Harris 224 (CANB 950917.1)	G01321	this study	-	0
<i>Eulophia graminea</i> Lindl.	<i>Eulophia graminea</i> Lindl.	C.P.Brock 311 (CANB 596921.1)	G02766	this study	-	0
<i>Gastrochilus calceolaris</i> (Buch.-Ham. ex Sm.) D.Don	<i>Gastrochilus calceolaris</i> (Buch.-Ham. ex Sm.) D.Don	GenBank accession	NC042686*	NC042686*	-	0
<i>Goodyera schlechtendaliana</i> Rchb.f.	<i>Goodyera schlechtendaliana</i> Rchb.f.	M.A.Clements 12186 (CANB 950929.1)	G04898	this study	this study	0
<i>Habenaria elongata</i> R.Br.	<i>Pecteilis elongata</i> R.Br.	A.R.Field 3904 (CNS)	G03456	this study	this study	0
<i>Hetaeria oblongifolia</i> Blume	<i>Hetaeria oblongifolia</i> Blume	K.Schulte 150 (CNS 144275.1)	G00729	this study	-	0
<i>Holcoglossum subulifolium</i> (Rchb.f.) Christenson	<i>Holcoglossum subulifolium</i> (Rchb.f.) Christenson	GenBank accession	NC041519*	NC041519*	-	0
<i>Neottia japonica</i> (Blume) Szlach.	<i>Neottia japonica</i> (Blume) Szlach.	GenBank accession	NC041446*	NC041446*	-	0
<i>Nervilia aragoana</i> Gaudich.	<i>Nervilia aragoana</i> Gaudich.	L.Roberts ORG3787 (CANB 669943.1)	G03442	this study	this study	0
<i>Paphiopedilum delenatii</i> Guillaumin	<i>Paphiopedilum delenatii</i> Guillaumin	GenBank accession	NC041309*	NC041309*	-	0
<i>Pendulorchis himalaica</i> (Deb, Sengupta & Malick) Z.J.Liu, K.Wei Liu & X.J.Xiao	<i>Pendulorchis himalaica</i> (Deb, Sengupta & Malick) Z.J.Liu, K.Wei Liu & X.J.Xiao	GenBank accession	NC041513*	NC041513*	-	0
<i>Peristylus banfieldii</i> (F.M.Bailey) Lavarack	<i>Peristylus banfieldii</i> (F.M.Bailey) Lavarack	R.Collins 1158 (CANB 7904962)	G06628	this study	-	0
<i>Phragmipedium longifolium</i> (Rchb.f. & Warsz.) Rolfe	<i>Phragmipedium longifolium</i> (Rchb.f. & Warsz.) Rolfe	GenBank accession	NC028149*	NC028149*	-	0

Supplementary Material

Species	Species <i>sensu</i> Jones & Clements ¹	Voucher details	Sample identifier	Reference plastid data	Reference nuclear data	Ancestral range analysis
<i>Rhomboda polygonoides</i> (F.Muell.) Ormerod	<i>Rhomboda polygonoides</i> (F.Muell.) Ormerod	K.Schulte 249 (CNS 144274.1)	G00708	this study	-	0
	<i>Salacistis ochroleuca</i> (F.M.Bailey)					
<i>Salacistis rubicunda</i> (Blume) M.C.Pace	M.A.Clem. & D.L.Jones	B.Gray 8333 (CANB 507310.1)	G06635	this study	-	0
<i>Sobralia callosa</i> L.O.Williams	<i>Sobralia callosa</i> L.O.Williams	GenBank accession	NC028147*	NC028147*	-	0
<i>Spiranthes aestivalis</i> (Poir.) Rich.	<i>Spiranthes aestivalis</i> (Poir.) Rich.	M.A.Clements 12199 (CANB 909010.1)	G05319	this study	this study	0
<i>Spiranthes sinensis</i> (Pers.) Ames	<i>Spiranthes australis</i> Lindl.	T.N.Hayashi 67	G04983	this study	this study	0
		H.Wapstra ORG 4598 (CANB 670901.1)				
<i>Townsonia viridis</i> (Hook.f.) Schltr.	<i>Townsonia viridis</i> (Hook.f.) Schltr.	670901.1)	G01314	this study	-	0
<i>Vanilla aphylla</i> Blume	<i>Vanilla aphylla</i> Blume	GenBank accession	NC035320*	NC035320*	-	0
<i>Vanilla pompona</i> Schiede	<i>Vanilla pompona</i> Schiede	GenBank accession	NC036809*	NC036809*	-	0
<i>Zeuxine oblonga</i> R.S.Rogers & C.T.White	<i>Zeuxine oblonga</i> R.S.Rogers & C.T.White	K.Schulte 181 (CNS 144329.1)	G00175	this study	this study	0