

# TAXON

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**Species delimitation at a global scale reveals high species richness with complex biogeography and patterns of symbiont association in *Peltigera* section *Peltigera* (lichenized Ascomycota: Lecanoromycetes)**

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**Table S1.** Taxon sampling for *Peltigera* sect. *Peltigera* and sect. *Retifoveatae* and five outgroup species, with associated voucher information, including mycobiont and cyanobiont sequences. When applicable, the cyanobiont *rbcLX* phylogroup is specified following O'Brien & al. (2013), Magain & al. (2017a), and the present study. The term “unique” was used when the *rbcLX* sequence did not cluster with any of the defined phylogroups (roman numerals) or haplotypes. Newly generated sequences are indicated in bold. Clade numbers follow Fig. 1. OG indicates outgroup taxa.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>Peltigera aphthosa</i> (L.) Willd.	OG	P4002	U.S.A.: AK, <i>Miadlikowska s.n.</i> (OSC)	–	<b>MH771012</b>	<b>MH770256</b>	<b>MH770507</b>	<b>MH770009</b>	–	N/A
<i>P. antarctica</i> C.W.Dodge	5	P0077	Chile: Region XII, <i>Goffinet 6837</i> (CONN)	<b>MH758271</b>	<b>MH770824</b>	<b>MH770051</b>	<b>MH770300</b>	<b>MH769795</b>	KX923110	VI
<i>P. antarctica</i> C.W.Dodge	5	P0442	Chile: Region XI, <i>Rubio 4073</i> (H)	<b>MH758272</b>	<b>MH770825</b>	<b>MH770052</b>	<b>MH770301</b>	<b>MH769796</b>	<b>MH770563</b>	VI
<i>P. antarctica</i> C.W.Dodge	5	P1805	South Orkney Islands, <i>Lindsay 935</i> (H)	<b>MH758275</b>	<b>MH770826</b>	–	–	–	–	N/A
<i>P. antarctica</i> C.W.Dodge	5	P2034	Argentina, <i>Stenroos 1954</i> (H)	<b>MH758270</b>	–	<b>MH770053</b>	<b>MH770302</b>	–	<b>MH770564</b>	XXX
<i>P. antarctica</i> C.W.Dodge	5	P2044	Chile: Region XII, <i>Goffinet 10521-2</i> (CONN)	<b>MH758273</b>	<b>MH770827</b>	<b>MH770054</b>	<b>MH770303</b>	<b>MH769797</b>	<b>MH770565</b>	XXV
<i>P. antarctica</i> C.W.Dodge	5	P2065	Chile: Region X, <i>Wheeler &amp; Nelson 5893</i> (CONC)	<b>MH758274</b>	<b>MH770828</b>	<b>MH770055</b>	<b>MH770304</b>	<b>MH769798</b>	<b>MH770566</b>	unique
<i>P. aubertii</i> C.W.Dodge	2	P1815	Chile: Region XII, <i>Stenroos 2459</i> (H)	<b>MH758229</b>	<b>MH770812</b>	–	–	–	–	N/A
<i>P. aubertii</i> C.W.Dodge	2	P2037	Chile: Region XII, <i>Goffinet 10559</i> (CONN)	<b>MH758230</b>	<b>MH770813</b>	<b>MH770013</b>	<b>MH770259</b>	<b>MH769760</b>	<b>MH770512</b>	XXII
<i>P. aubertii</i> C.W.Dodge	2	P2040	Chile: Region XII, <i>Shaw 18004</i> (DUKE)	<b>MH758231</b>	–	–	–	–	<b>MH770513</b>	XXII
<i>P. aubertii</i> C.W.Dodge	2	P2042	Chile: Region XII, <i>Goffinet 10558</i> (CONN)	<b>MH758232</b>	–	–	–	–	<b>MH770514</b>	XXII
<i>P. aubertii</i> C.W.Dodge	2	P2056	Chile: Region X, <i>Wheeler &amp; Nelson 3191</i> (CONC)	<b>MH758233</b>	<b>MH770814</b>	<b>MH770014</b>	<b>MH770260</b>	<b>MH769761</b>	<b>MH770515</b>	XXIII
<i>P. aubertii</i> C.W.Dodge	2	P2066	Chile: Region X, <i>Wheeler &amp; Nelson 5870</i> (CONC)	<b>MH758234</b>	–	<b>MH770015</b>	<b>MH770261</b>	–	<b>MH770516</b>	unique
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 1	9	P0027	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23.03.03-10</i> (DUKE 0357975)	<b>MH758454</b>	<b>MH770954</b>	–	–	–	<b>MH770742</b>	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 1	9	P0408	Colombia, <i>Dumont &amp; al. 4066</i> (H)	<b>MH758440</b>	<b>MH770955</b>	<b>MH770185</b>	<b>MH770444</b>	–	<b>MH770743</b>	V
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 2	9	P2059	Mexico, <i>Herrera-Campos 13380</i> (MEXU)	<b>MH758442</b>	<b>MH770956</b>	<b>MH770186</b>	<b>MH770445</b>	<b>MH769940</b>	<b>MH770744</b>	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 2	9	P2138	Mexico, <i>Herrera-Campos 13381</i> (MEXU)	<b>MH758462</b>	<b>MH770957</b>	<b>MH770187</b>	<b>MH770446</b>	<b>MH769941</b>	<b>MH770745</b>	N/A
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 3	9	P2048	Peru, <i>Lutzoni 05.23.212-7</i> (DUKE 0357974)	<b>MH758465</b>	<b>MH770958</b>	<b>MH770188</b>	<b>MH770447</b>	<b>MH769942</b>	<b>MH770746</b>	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 3	9	P2073	Peru, <i>Rivas Plata &amp; Ramos s.n.</i> (DUKE 0357973)	<b>MH758466</b>	<b>MH770959</b>	<b>MH770189</b>	<b>MH770448</b>	<b>MH769943</b>	<b>MH770747</b>	XXXVI
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 3	9	P2076	Colombia, <i>Lücking 33628</i> (UDBC)	<b>MH758451</b>	<b>MH770960</b>	<b>MH770190</b>	<b>MH770449</b>	<b>MH769944</b>	<b>MH770748</b>	XXXVI
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 3	9	P2197	Ecuador, <i>Truong 3975</i> (DUKE 040152)	<b>MH758460</b>	<b>MH770961</b>	<b>MH770191</b>	<b>MH770450</b>	<b>MH769945</b>	<b>MH770749</b>	XXXIX

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P0025	Costa Rica, <i>Miadlikowska &amp; Lutzoni</i> 23.03.03-8 (DUKE 0401856)	MH758453	MH770962	MH770192	MH770451	MH769946	MH770750	XXXIXe
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P0032	Costa Rica, <i>Miadlikowska &amp; Lutzoni</i> 23.03.03-15 (DUKE 0401855)	MH758455	MH770963	–	–	–	MH770742	XL
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P0038	Costa Rica, <i>Miadlikowska &amp; Lutzoni</i> 23.03.03-21 (DUKE 0401857)	MH758456	MH770964	–	–	–	MH770743	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P0054	Costa Rica, <i>Miadlikowska &amp; Lutzoni</i> 22.03.03-37 (DUKE 0401853)	MH758457	MH770965	–	–	–	MH770744	XL
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P2060	Mexico, <i>Herrera-Campos</i> 137 (MEXU)	MH758461	MH770966	MH770193	MH770452	MH769947	MH770745	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 4	9	P2070	Costa Rica, <i>Miadlikowska &amp; Lutzoni</i> 22.03.03-21 (DUKE 0401854)	MH758458	–	–	–	–	–	N/A
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P1598	Brazil, <i>Miadlikowska &amp; al. s.n.</i> (CGMS 34505)	MH758438	MH770967	MH770194	MH770453	MH769948	MH770751	V
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P1738	Peru, <i>Miadlikowska s.n.</i> (DUKE)	MH758443	–	–	–	–	MH770752	XXXIXd
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2010	Brazil, <i>Canéz</i> 10234 (CGMS 35044)	MH758447	MH770968	MH770195	MH770454	MH769949	MH770753	V
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2011	Brazil, <i>Magain s.n.</i> (CGMS 34427)	MH758448	MH770969	MH770196	MH770455	MH769950	MH770754	V
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2019	Ecuador, <i>Kalb</i> 18391 (DUKE)	MH758459	MH770970	MH770197	–	MH769951	MH770755	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2033	Brazil, <i>Miadlikowska s.n.</i> (CGMS 34409)	MH758449	–	–	–	–	MH770756	V
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2052	Bolivia, <i>Kukwa</i> 8504 (ex UGDA-L-17700, DUKE dupl. 0401859)	MH758445	MH770971	MH770198	MH770456	MH769952	MH770757	XXXIX
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P2134	Bolivia, <i>Truong</i> 2826 (DUKE 0401858)	MH758446	MH770972	MH770199	MH770457	MH769953	–	N/A
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 5	9	P1729	Peru, <i>Lutzoni</i> 05.23.2012-13 (DUKE 0357966)	MH758464	–	–	–	–	–	N/A
<i>P. austroamericana</i> Zahlbr./ <i>fibrilloides</i> (Gyeln.) Vitik. 6	9	P2055	Peru, <i>Bennett s.n.</i> (WIS)	MH758444	MH770973	MH770200	MH770458	MH769954	MH770758	XXXVI
<i>P. austroamericana</i> Zahlbr. s.l.	9	P0940	Colombia, <i>Lücking</i> 33653 (UDBC)	MH758450	–	–	–	–	MH770733	XXXIXb
<i>P. austroamericana</i> Zahlbr. s.l.	9	P1201	Mexico, <i>Barcenás-Penas</i> 1233 (MEXU)	MH758441	–	–	–	–	MH770734	XXXVI
<i>P. austroamericana</i> Zahlbr. s.l.	9	P1474	Peru, <i>Miadlikowska s.n.</i> (DUKE 0357967)	MH758463	–	–	–	–	MH770735	XXXIX

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. austroamericana</i> Zahlbr. s.l.	9	P1602	Brazil, <i>Miadlikowska &amp; al. s.n.</i> (CGMS 34490)	<b>MH758439</b>	–	–	–	–	<b>MH770736</b>	V
<i>P. austroamericana</i> Zahlbr. s.l.	9	P1727	Peru, <i>Rivas Plata &amp; Ramos s.n.</i> (DUKE 0357971)	–	–	–	–	–	<b>MH770737</b>	XXXIXd
<i>P. austroamericana</i> Zahlbr. s.l.	9	P2079	Colombia, <i>Lücking 33631</i> (UDBC)	<b>MH758452</b>	–	–	–	–	<b>MH770738</b>	XXXVI
<i>P. canina</i> (L.) Willd. 1	9	HOB12	Canada: BC, <i>O'Brien 020708-4-5-1</i> (DUKE)	FJ708890	–	<b>MH770201</b>	<b>MH770459</b>	<b>MH769955</b>	KC437709	V
<i>P. canina</i> (L.) Willd. 1	9	HOB13	Canada: BC, <i>O'Brien 030611-0-0-6</i> (DUKE)	FJ708881	FJ709294	<b>MH770202</b>	<b>MH770460</b>	<b>MH769956</b>	–	N/A
<i>P. canina</i> (L.) Willd. 1	9	P0014	Iceland, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357980)	KU954063	KM005803	<b>MH770203</b>	<b>MH770461</b>	<b>MH769957</b>	KX923097	VI
<i>P. canina</i> (L.) Willd. 1	9	P1411	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357997)	<b>MH758475</b>	<b>MH770974</b>	–	–	<b>MH769958</b>	<b>MH770759</b>	V
<i>P. canina</i> (L.) Willd. 1	9	P1412	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401822)	<b>MH758475</b>	–	–	–	–	<b>MH770760</b>	V
<i>P. canina</i> (L.) Willd. 1	9	P1827	Papua New Guinea, <i>Sérusiaux s.n.</i> (LG)	–	–	–	–	–	<b>MH770761</b>	XXXI
<i>P. canina</i> (L.) Willd. 1	9	P2032	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401836)	<b>MH758478</b>	<b>MH770975</b>	<b>MH770204</b>	<b>MH770462</b>	<b>MH769959</b>	<b>MH770762</b>	V
<i>P. canina</i> (L.) Willd. 1	9	P2097	China: Yunnan, <i>Miadlikowska s.n.</i> (DUKE 0401862)	<b>MH758470</b>	<b>MH770976</b>	<b>MH770205</b>	–	<b>MH769960</b>	<b>MH770763</b>	XXXVIIIa
<i>P. canina</i> (L.) Willd. 1	9	P2113	Austria, <i>Hafellner &amp; Miadlikowska s.n.</i> (DUKE 0130114)	<b>MH758467</b>	<b>MH770977</b>	<b>MH770206</b>	<b>MH770463</b>	<b>MH769961</b>	<b>MH770764</b>	V
<i>P. canina</i> (L.) Willd. 1	9	P2118	France: Corsica, <i>Vust 6421</i> (G)	<b>MH758471</b>	<b>MH770978</b>	<b>MH770207</b>	<b>MH770464</b>	<b>MH769962</b>	<b>MH770765</b>	XXIX
<i>P. canina</i> (L.) Willd. 1	9	P2120	Switzerland, <i>Vust 279</i> (G)	<b>MH758479</b>	<b>MH770979</b>	<b>MH770208</b>	<b>MH770465</b>	<b>MH769963</b>	<b>MH770766</b>	V
<i>P. canina</i> (L.) Willd. 1	9	P2123	France: Corsica, <i>Vust 6412</i> (G)	<b>MH758473</b>	<b>MH770980</b>	<b>MH770209</b>	<b>MH770466</b>	<b>MH769964</b>	<b>MH770767</b>	XXIX
<i>P. canina</i> (L.) Willd. 1	9	P2158	Papua New Guinea, <i>Aptroot 32283</i> (H)	–	–	–	–	–	<b>MH770768</b>	XXXI
<i>P. canina</i> (L.) Willd. 1	9	P2159	Papua New Guinea, <i>Sérusiaux s.n.</i> (LG)	<b>MH758472</b>	<b>MH770981</b>	<b>MH770210</b>	–	–	–	N/A
<i>P. canina</i> (L.) Willd. 1	9	P2193	The Netherlands, <i>Aptroot 53752</i> (ABL)	<b>MH758474</b>	<b>MH770982</b>	<b>MH770211</b>	<b>MH770467</b>	<b>MH769965</b>	<b>MH770769</b>	XXV
<i>P. canina</i> (L.) Willd. 1	9	P2213	Canada: BC, <i>Goward 5305</i> (UBC)	<b>MH758469</b>	<b>MH770983</b>	<b>MH770212</b>	<b>MH770468</b>	<b>MH769966</b>	<b>MH770770</b>	VI
<i>P. canina</i> (L.) Willd. 2	9	HOB10	Canada: BC, <i>O'Brien 020708-31-5-2</i> (DUKE)	FJ708874	FJ709304	<b>MH770213</b>	–	<b>MH769967</b>	–	N/A
<i>P. canina</i> (L.) Willd. 2	9	HOB11	Canada: BC, <i>O'Brien 020708-70-5-2</i> (DUKE)	FJ708876	FJ709303	–	–	–	–	N/A
<i>P. canina</i> (L.) Willd. 2	9	HOB9	Canada: BC, <i>O'Brien 020708-70-1-3</i> (DUKE)	FJ708875	FJ709304	<b>MH770216</b>	<b>MH770469</b>	<b>MH769968</b>	–	N/A
<i>P. canina</i> (L.) Willd. 2	9	P0004	Iceland, <i>Miadlikowska &amp; Lutzoni 08.08.10-3</i> (DUKE 0401829)	KU954062	KM005821	<b>MH770217</b>	<b>MH770470</b>	<b>MH769969</b>	KX923096	XXXIII
<i>P. canina</i> (L.) Willd. 2	9	P0652	U.S.A.: NC, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357998)	<b>MH758480</b>	–	<b>MH770218</b>	–	–	<b>MH770771</b>	XXXVIIIa

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	β-tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. canina</i> (L.) Willd. 2	9	P0655	U.S.A.: NC, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401827)	–	–	<b>MH770219</b>	–	–	<b>MH770772</b>	XXXVIIIa
<i>P. canina</i> (L.) Willd. 2	9	P0663	U.S.A.: NC, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0358000)	<b>MH758481</b>	–	<b>MH770220</b>	–	–	<b>MH770773</b>	XXXVII
<i>P. canina</i> (L.) Willd. 2	9	P1319	U.S.A.: NC, <i>Lutzoni &amp; Miadlikowska s.n.</i> (DUKE 0401828)	<b>MH758475</b>	–	<b>MH770221</b>	–	–	KX923113	XXXVIIIa
<i>P. canina</i> (L.) Willd. 2	9	P1483	U.S.A.: MO, <i>Buck 48584</i> (NY 00729928)	<b>MH758482</b>	–	<b>MH770222</b>	–	–	<b>MH770774</b>	XXXIV
<i>P. canina</i> (L.) Willd. 2	9	P2026	U.S.A.: NC, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357999)	<b>MH758483</b>	<b>MH770984</b>	<b>MH770223</b>	<b>MH770471</b>	<b>MH769970</b>	<b>MH770775</b>	XXXVIIIa
<i>P. canina</i> (L.) Willd. 2	9	P2081	U.S.A.: NC, <i>Hollinger 2731</i> (UBC)	<b>MH758484</b>	<b>MH770985</b>	<b>MH770224</b>	<b>MH770472</b>	<b>MH769971</b>	<b>MH770776</b>	XXXVII
<i>P. canina</i> (L.) Willd. 2	9	P2090	U.S.A.: OK, <i>Buck 46463</i> (DUKE 0138952)	<b>MH758485</b>	<b>MH770986</b>	<b>MH770216</b>	<b>MH770473</b>	<b>MH769972</b>	<b>MH770777</b>	XXXIV
<i>P. canina</i> (L.) Willd. 2	9	P2126	U.S.A.: NC, <i>Goffinet 4755</i> (DUKE)	–	<b>MH770987</b>	<b>MH770217</b>	<b>MH770474</b>	–	<b>MH770778</b>	XXXIV
<i>P. canina</i> (L.) Willd. 2	9	P2190	Canada: AB, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401817)	<b>MH758468</b>	<b>MH770988</b>	<b>MH770218</b>	–	<b>MH769973</b>	<b>MH770779</b>	VI
<i>P. canina</i> (L.) Willd. 2	9	P2201	U.S.A.: UT, <i>Truong 3996</i> (DUKE 0401865)	<b>MH758486</b>	<b>MH770989</b>	<b>MH770219</b>	<b>MH770475</b>	<b>MH769974</b>	<b>MH770780</b>	XXX
<i>P. canina</i> (L.) Willd. 2	9	P2211	U.S.A.: CO, <i>Leavitt SDL-CO-13</i> (BRY-C)	<b>MH758487</b>	<b>MH770990</b>	<b>MH770220</b>	–	<b>MH769975</b>	<b>MH770781</b>	XXX
<i>P. canina</i> (L.) Willd. 2	9	P2221	U.S.A.: MI, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401826)	<b>MH758488</b>	<b>MH770991</b>	<b>MH770221</b>	<b>MH770476</b>	<b>MH769976</b>	<b>MH770782</b>	XXXIII
<i>P. canina</i> (L.) Willd. 2	9	P2222	U.S.A.: TN, <i>Chen &amp; Gajdeczka s.n.</i> (DUKE 0401818)	<b>MH758489</b>	<b>MH770992</b>	<b>MH770222</b>	<b>MH770477</b>	<b>MH769977</b>	<b>MH770783</b>	V
<i>P. castanea</i> Goward & al.	4	P2102	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357981)	<b>MH758239</b>	–	<b>MH770029</b>	<b>MH770279</b>	–	<b>MH770534</b>	XXXIIIa
<i>P. cinnamomea</i> Goward	7	HOB21	Canada: BC, <i>O'Brien 030611-0-0-4</i> (DUKE)	FJ708912	FJ709306	<b>MH770129</b>	<b>MH770394</b>	<b>MH769886</b>	–	N/A
<i>P. cinnamomea</i> Goward	7	HOB22	Canada: BC, <i>O'Brien 040605-11-2</i> (DUKE)	FJ708913	FJ709307	<b>MH770130</b>	<b>MH770395</b>	<b>MH769887</b>	–	N/A
<i>P. cinnamomea</i> Goward	7	HOB23	Canada: BC, <i>O'Brien 040605-12-3</i> (DUKE)	FJ708911	FJ709305	–	–	–	–	N/A
<i>P. cinnamomea</i> Goward	7	P2141= P1808	Canada: BC, <i>Goward s.n.</i> (UBC)	<b>MH758379</b>	KX880187	<b>MH770131</b>	<b>MH770396</b>	<b>MH769888</b>	<b>MH770687</b>	XLII
<i>P. continentalis</i> Vitik.	3	NP29	China: Ningxia, <i>Niu 12-0087</i> (Ningxia Univ.)	<b>MH758236</b>	<b>MH770820</b>	<b>MH770026</b>	<b>MH770276</b>	<b>MH769773</b>	<b>MH770531</b>	XXXIIc
<i>P. continentalis</i> Vitik.	3	P1810	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357965)	<b>MH758237</b>	KM005807	<b>MH770027</b>	<b>MH770277</b>	<b>MH769774</b>	<b>MH770532</b>	XXXIX
<i>P. continentalis</i> Vitik.	3	P2099	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357969)	<b>MH758238</b>	<b>MH770821</b>	<b>MH770028</b>	<b>MH770278</b>	<b>MH769775</b>	<b>MH770533</b>	XXXIX
<i>P. degenii</i> Gyeln. 1	8	P0523	Norway, <i>Magain s.n.</i> (LG)	<b>MH758402</b>	KM005828	<b>MH770136</b>	<b>MH770400</b>	<b>MH769890</b>	<b>MH770692</b>	XLIII

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	β-tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. degenii</i> Gyeln. 1	8	P0563	Norway, <i>Magain s.n.</i> (LG)	MH758403	MH770913	MH770137	MH770401	MH769891	MH770693	XVI
<i>P. degenii</i> Gyeln. 1	8	P0586	Norway, <i>Magain s.n.</i> (LG)	MH758404	MH770914	MH770138	MH770402	MH769892	MH770694	XIII
<i>P. degenii</i> Gyeln. 1	8	P2108	Austria, <i>Hafellner &amp; Miadlikowska s.n.</i> (DUKE 0032160)	MH758399	MH770915	MH770139	MH770403	MH769893	MH770695	XXX
<i>P. degenii</i> Gyeln. 1	8	P2129	France, <i>Magain s.n.</i> (DUKE 0401808)	MH758400	MH770916	MH770140	MH770404	MH769894	–	N/A
<i>P. degenii</i> Gyeln. 1	8	P2130	France, <i>Magain s.n.</i> (DUKE 0401807)	MH758401	MH770917	MH770141	MH770405	MH769895	MH770696	V
<i>P. degenii</i> Gyeln. 1	8	P2133	Ukraine, <i>Dymytrova &amp; Naumovich 183</i> (KW 69499)	MH758405	MH770918	MH770142	MH770406	MH769896	–	N/A
<i>P. degenii</i> Gyeln. 1	8	P2170	Ukraine, <i>Dymytrova &amp; Savchyn 22</i> (KW)	MH758406	MH770919	MH770143	MH770407	MH769897	MH770697	XLIII
<i>P. degenii</i> Gyeln. 2a	8	HOB3	Canada: BC, <i>O'Brien 040605-10-3</i> (DUKE)	FJ709030	FJ709315	MH770144	MH770408	MH769898	–	N/A
<i>P. degenii</i> Gyeln. 2a	8	P2107	Canada: QC, <i>Darnajoux s.n.</i> (DUKE 0401806)	MH758410	MH770920	MH770145	–	MH769899	MH770698	V
<i>P. degenii</i> Gyeln. 2a	8	P2139	Russia: Khabarovsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401824)	MH758413	MH770921	MH770146	MH770409	MH769900	MH770699	XLIII
<i>P. degenii</i> Gyeln. 2a	8	P2147	Canada: BC, <i>Goward 02-380</i> (ACC L41345)	MH758407	MH770922	MH770147	–	MH769901	MH770700	XLIII
<i>P. degenii</i> Gyeln. 2a	8	P2182	Canada: QC, <i>Roy 11-5914C</i> (QFA 0595636)	MH758411	–	MH770148	–	MH769902	MH770701	XLII
<i>P. degenii</i> Gyeln. 2a	8	P2183	Canada: QC, <i>Miadlikowska &amp; Lutzoni 07.04.03-1A</i> (DUKE 0401805)	MH758412	MH770923	MH770149	–	MH769903	MH770702	XIII
<i>P. degenii</i> Gyeln. 2a	8	P3086	Japan: Hokkaido, <i>Thor 13948</i> (UPS 392189)	MH758409	MH770924	MH770150	MH770410	MH769904	MH770703	XIII
<i>P. degenii</i> Gyeln. 2b	8	P2228	Japan: Honshu, <i>Thor 11963</i> (UPS 395916)	MH758408	–	MH770151	MH770411	MH769905	MH770704	XIII
<i>P. degenii</i> Gyeln. 3a	8	P2136	Russia: Sakhalin, <i>Tchabanenko s.n.</i> (SAKH 3083)	MH758419	MH770925	MH770152	MH770412	MH769906	MH770705	XLIII
<i>P. degenii</i> Gyeln. 3a	8	P2137	Russia: Sakhalin, <i>Tchabanenko s.n.</i> (SAKH 3081)	MH758420	MH770926	MH770153	MH770413	MH769907	MH770706	V
<i>P. degenii</i> Gyeln. 3b	8	P1267	China: Jilin, <i>Sohrabi 16474</i> (H)	MH758414	MH770927	MH770154	MH770414	MH769908	MH770707	V
<i>P. degenii</i> Gyeln. 3b	8	P1276	China: Jilin, <i>Sohrabi 16417</i> (H)	MH758415	MH770928	MH770155	MH770415	MH769909	MH770708	V
<i>P. degenii</i> Gyeln. 3b	8	P2022	Russia: Kurile Islands, <i>Abrahamczyk 15</i> (H)	MH758416	MH770929	MH770156	MH770416	MH769910	MH770709	V
<i>P. degenii</i> Gyeln. 3c	8	ES3306	Japan: Honshu, <i>Sérusiaux s.n.</i> (LG)	MH758417	MH770930	MH770157	MH770417	MH769911	MH770710	XXXIIb
<i>P. degenii</i> Gyeln. 3c	8	P2023	Japan: Honshu, <i>Ohmura &amp; al. s.n.</i> (DUKE 0188055)	MH758418	MH770931	MH770158	MH770418	MH769912	MH770711	V
<i>P. didactyla</i> (With.) J.R.Laundon 1	4	P2140=P1812	Belgium, <i>Magain s.n.</i> (DUKE 0357985)	MH758240	–	MH770030	MH770280	MH769777	MH770535	unique
<i>P. didactyla</i> (With.) J.R.Laundon 1	4	P2144	Norway, <i>Magain s.n.</i> (LG)	MH758244	–	MH770031	MH770281	MH769778	–	N/A

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. didactyla</i> (With.) J.R.Laundon 1	4	P2145	New Zealand, Campbell Island, <i>Harris 5326</i> (NY)	<b>MH758241</b>	–	–	–	–	<b>MH770536</b>	unique
<i>P. didactyla</i> (With.) J.R.Laundon 1	4	P2200	U.S.A.: UT; <i>Truong 3991</i> (DUKE 0401851)	<b>MH758246</b>	–	<b>MH770032</b>	<b>MH770282</b>	<b>MH769779</b>	<b>MH770537</b>	XXX
<i>P. didactyla</i> (With.) J.R.Laundon 2	4	NP2	China: Sichuan, <i>Wang 10-31861</i> (KUN)	<b>MH758243</b>	–	<b>MH770033</b>	<b>MH770283</b>	–	<b>MH770538</b>	XXXIIb
<i>P. didactyla</i> (With.) J.R.Laundon 2	4	P2217	Russia: Khabarovsk, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357977)	–	–	–	–	–	<b>MH770539</b>	XXXIII
<i>P. didactyla</i> (With.) J.R.Laundon 3	4	P2109	U.S.A.: PA, <i>Lendemmer 13269</i> (DUKE 0154812)	<b>MH758245</b>	–	–	–	<b>MH769776</b>	<b>MH770540</b>	XXXV
<i>P. didactyla</i> (With.) J.R.Laundon 3	4	P2110	Canada: BC, <i>Goward s.n.</i> (DUKE 0017197)	<b>MH758242</b>	–	<b>MH770034</b>	–	–	<b>MH770541</b>	XXX
<i>P. erioderma</i> Vain. 1	7	P2162	Papua New Guinea, <i>Sérusiaux s.n.</i> (LG)	<b>MH758380</b>	<b>MH770911</b>	<b>MH770132</b>	<b>MH770397</b>	<b>MH769889</b>	<b>MH770688</b>	XXXI
<i>P. erioderma</i> Vain. 2	7	P2163	Papua New Guinea, <i>Sérusiaux 14107</i> (LG)	<b>MH758381</b>	–	<b>MH770133</b>	<b>MH770398</b>	–	<b>MH770689</b>	XXXI
<i>P. evansiana</i> Gyeln.	9	P0630	U.S.A.: NC, <i>Miadlikowska &amp; al. s.n.</i> (DUKE 0401810)	<b>MH758490</b>	–	–	–	–	<b>MH770784</b>	XXXIXa
<i>P. evansiana</i> Gyeln.	9	P1817	U.S.A.: PA, <i>Lendemmer 17422</i> (NY 01105603)	<b>MH758491</b>	KM005808	–	<b>MH770478</b>	<b>MH769978</b>	<b>MH770785</b>	XXXIXa
<i>P. evansiana</i> Gyeln.	9	P1818	U.S.A.: PA, <i>Lendemmer 17753</i> (NY 01103610)	<b>MH758492</b>	KM005809	–	–	–	–	N/A
<i>P. evansiana</i> Gyeln.	9	P2084	U.S.A.: NC, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357991)	<b>MH758493</b>	<b>MH770993</b>	<b>MH770225</b>	<b>MH770479</b>	<b>MH769979</b>	<b>MH770786</b>	XXXIXa
<i>P. evansiana</i> Gyeln.	9	P2189	U.S.A.: MI, <i>Miadlikowska &amp; al. s.n.</i> (DUKE 0401813)	<b>MH758494</b>	<b>MH770994</b>	<b>MH770226</b>	<b>MH770480</b>	<b>MH769980</b>	<b>MH770787</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P0081	Russia: Kamchatka, <i>Himmelbrandt s.n.</i> (H)	<b>MH758251</b>	–	–	–	–	<b>MH770542</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P1109	Canada: BC, <i>Goward 10-74</i> (UBC)	<b>MH758250</b>	–	–	–	–	<b>MH770543</b>	unique
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P2064	Chile: Region XI, <i>Wheeler &amp; Nelson 6297</i> (CONC)	<b>MH758247</b>	–	<b>MH770035</b>	<b>MH770284</b>	<b>MH769780</b>	<b>MH770544</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P2103	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357970)	<b>MH758252</b>	–	<b>MH770036</b>	<b>MH770285</b>	<b>MH769781</b>	<b>MH770545</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P2104	U.S.A.: MI, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357972)	<b>MH758253</b>	–	<b>MH770037</b>	<b>MH770286</b>	<b>MH769782</b>	<b>MH770546</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 1	4	P2111	U.S.A.: NY, <i>Harris 53633</i> (DUKE 0138925)	<b>MH758254</b>	–	<b>MH770038</b>	<b>MH770287</b>	<b>MH769783</b>	<b>MH770547</b>	XXXIIIb
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 2	4	P0943	Colombia, <i>Lücking 33627</i> (UDBC)	<b>MH758248</b>	–	<b>MH770039</b>	<b>MH770288</b>	<b>MH769784</b>	<b>MH770548</b>	XXI
<i>P. extenuata</i> (Nyl. ex Vain.) Lojka 2	4	P2057	Ecuador: Galapagos, <i>Spielmann 10611</i> (CDS-51978)	<b>MH758249</b>	–	<b>MH770040</b>	<b>MH770289</b>	<b>MH769785</b>	<b>MH770549</b>	XXI
<i>P. fimbriata</i> Vitik. & al.	6	FIM1	Papua New Guinea, Sérusiaux & al. 2009	FJ527272	–	–	–	–	–	N/A
<i>P. fimbriata</i> Vitik. & al.	6	FIM2	Papua New Guinea, Sérusiaux & al. 2009	FJ527273	–	–	–	–	–	N/A
<i>P. fimbriata</i> Vitik. & al.	6	FIM3	Papua New Guinea, Sérusiaux & al. 2009	FJ527274	–	–	–	–	–	N/A

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. friesiorum</i> Gyeln.	6	P0424	Brazil, Marcelli 25096 (H)	MH758323	–	–	–	–	MH770621	V
<i>P. friesiorum</i> Gyeln.	6	P1554	Brazil, Miadlikowska & al. s.n. (CGMS 34533)	MH758324	–	–	–	–	MH770622	XXXIXe
<i>P. friesiorum</i> Gyeln.	6	P1601	Brazil, Miadlikowska & al. s.n. (CGMS 34582)	MH758325	–	–	–	–	MH770623	V
<i>P. friesiorum</i> Gyeln.	6	P1604	Brazil, Miadlikowska & al. s.n. (CGMS 34531)	MH758326	–	–	–	–	MH770624	V
<i>P. friesiorum</i> Gyeln.	6	P1607	Brazil, Miadlikowska & al. s.n. (CGMS 34575)	MH758327	–	–	–	–	MH770625	XXXIXc
<i>P. friesiorum</i> Gyeln.	6	P1647	Brazil, Miadlikowska & al. s.n. (CGMS 34539)	MH758328	MH770870	MH770094	MH770351	MH769848	MH770626	V
<i>P. friesiorum</i> Gyeln.	6	P1739	Peru, Miadlikowska s.n. (DUKE 0401814)	MH758337	MH770872	MH770096	MH770353	MH769850	MH770628	XXXIXd
<i>P. friesiorum</i> Gyeln.	6	P2005	Brazil, Miadlikowska & al. s.n. (CGMS 35043)	MH758330	–	–	–	–	MH770629	XXXIX
<i>P. friesiorum</i> Gyeln.	6	P2006	Brazil, Lutzoni & al. s.n. (CGMS 34570)	MH758331	MH770873	–	–	–	MH770630	XXXIXe
<i>P. friesiorum</i> Gyeln.	6	P2007	Brazil, Miadlikowska & al. s.n. (CGMS 34587)	MH758332	MH770874	MH770097	MH770354	MH769851	MH770631	V
<i>P. friesiorum</i> Gyeln.	6	P2008	Brazil, Miadlikowska & al. s.n. (CGMS 35050)	MH758333	–	–	–	–	MH770632	V
<i>P. friesiorum</i> Gyeln.	6	P2009	Brazil, Miadlikowska & al. s.n. (CGMS 35054)	MH758334	–	–	–	–	MH770633	V
<i>P. friesiorum</i> Gyeln.	6	P2035	Brazil, Spielmann & al. 9935 (CGMS 35048)	MH758335	MH770875	MH770098	MH770355	MH769852	MH770634	V
<i>P. friesiorum</i> Gyeln.	6	P2045	Bolivia, Kukwa 8465 (ex UGDA-L-17699 DUKE dupl.)	MH758322	MH770876	MH770099	MH770356	MH769853	MH770635	XXXVI
<i>P. frigida</i> R.Sant.	2	P0082	Chile: Region XI, Rubio 4064 (H)	MH758221	–	–	–	–	MH770517	XXXIX
<i>P. frigida</i> R.Sant.	2	P0422	Chile: Region XII, Stenroos 2192 (H)	MH758222	MH770815	–	MH770262	MH769762	MH770518	VI
<i>P. frigida</i> R.Sant.	2	P0427	Argentina, Stenroos 2158 (H)	MH758220	MH770816	MH770016	MH770263	MH769763	MH770519	VI
<i>P. frigida</i> R.Sant.	2	P2038	Chile: Region XII Goffinet 6643-1 (CONN)	–	–	–	–	–	MH770520	unique
<i>P. frigida</i> R.Sant.	2	P2041	Chile: Region XII, Shaw 18024 (DUKE)	MH758223	–	MH770017	MH770264	MH769764	MH770521	VI
<i>P. “fuscopraetextata”</i>	9	HOB7	Canada: BC, O’Brien 020708-62-5-3 (DUKE)	FJ708893	FJ709317	MH770175	MH770436	MH769930	–	N/A
<i>P. “fuscopraetextata”</i>	9	HOB8	Canada: BC, O’Brien 020708-31-5-3 (DUKE)	FJ708892	FJ709316	MH770176	MH770437	MH769931	–	N/A
<i>P. “fuscopraetextata”</i>	9	P1110	Canada: BC, Goward 06-1538B (UBC)	MH758507	MH770947	MH770177	–	MH769932	MH770723	VI
<i>P. “fuscopraetextata”</i>	9	P2012	Argentina, Stenroos 2235 (H)	MH758500	MH770948	MH770178	MH770438	MH769933	MH770724	VI
<i>P. “fuscopraetextata”</i>	9	P2014	Chile: Region XI, Rubio 4067 (H)	MH758503	MH770949	MH770179	MH770439	MH769934	MH770725	VI
<i>P. “fuscopraetextata”</i>	9	P2016	Argentina, Tibell 17537 (UPS 40375)	MH758501	–	–	–	–	MH770726	VI
<i>P. “fuscopraetextata”</i>	9	P2017	Chile: Region XII, Tibell 17788 (UPS 45291)	MH758504	–	–	–	–	MH770727	VI
<i>P. “fuscopraetextata”</i>	9	P2018	Argentina, Kalb s.n. (DUKE 0401830)	MH758502	MH770950	MH770180	–	MH769935	MH770728	VI
<i>P. “fuscopraetextata”</i>	9	P2036	Chile: Region XII, Goffinet 10490 (CONN)	MH758505	MH770951	MH770181	MH770440	MH769936	MH770729	VI



Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. "fuscopraetextata"</i>	9	P2067	Chile: Region XII, <i>Wheeler &amp; Nelson 6528</i> (CONC)	<b>MH758506</b>	<b>MH770952</b>	<b>MH770182</b>	<b>MH770441</b>	<b>MH769937</b>	<b>MH770730</b>	VI
<i>P. "fuscopraetextata"</i>	9	P2219	U.S.A.: OR, <i>McCune 30990</i> (OSC)	<b>MH758508</b>	–	<b>MH770183</b>	<b>MH770442</b>	<b>MH769938</b>	<b>MH770731</b>	VI
<i>P. "fuscopraetextata"</i>	9	P2223	U.S.A.: UT, <i>Truong 4016</i> (DUKE 0401863)	<b>MH758509</b>	<b>MH770953</b>	<b>MH770184</b>	<b>MH770443</b>	<b>MH769939</b>	<b>MH770732</b>	XXX
<i>P. granulosa</i> Sérus. & al.	6	P2176	Papua New Guinea, <i>Sérusiaux 15150</i> (LG)	<b>MH758338</b>	<b>MH770877</b>	<b>MH770100</b>	<b>MH770357</b>	<b>MH769854</b>	<b>MH770637</b>	V
<i>P. hymenina</i> (Ach.) Delise	OG	P430	Canada: NL, <i>Lendemer 10397</i> (H)	–	KX880099	MF947046	MF946937	MF946831	–	N/A
<i>P. isidiophora</i> L.F.Han & S.Y.Guo	3	20423	China: Hebei, Han & al. 2015	KJ095108	–	–	–	–	–	N/A
<i>P. isidiophora</i> L.F.Han & S.Y.Guo	3	20421S1	China: Hebei, Han & al. 2015	KJ095106	–	–	–	–	–	N/A
<i>P. isidiophora</i> L.F.Han & S.Y.Guo	3	20421S2	China: Hebei, Han & al. 2015	KJ095107	–	–	–	–	–	N/A
<i>P. islandica</i> T.Goward & S.S.Manoharan-Basil	9	IC332	Iceland, <i>Andresson 332</i> (AMNH)	KJ413245	KJ413189	<b>MH770227</b>	<b>MH770481</b>	<b>MH769981</b>	–	N/A
<i>P. islandica</i> T.Goward & S.S.Manoharan-Basil	9	IC355	Iceland, <i>Manoharan-Basil 355</i> (AMNH)	KJ413244	KJ413192	<b>MH770228</b>	<b>MH770482</b>	<b>MH769982</b>	–	N/A
<i>P. kristinssonii</i> Vitik.	2	HOB1	Canada: BC, <i>O'Brien 020708-62-1-5</i> (DUKE)	FJ708952	FJ709345	<b>MH770018</b>	<b>MH770265</b>	–	–	N/A
<i>P. kristinssonii</i> Vitik.	2	HOB2	Canada: BC, <i>O'Brien 020708-70-5-9</i> (DUKE)	FJ708944	FJ709341	<b>MH770019</b>	<b>MH770266</b>	<b>MH769765</b>	–	N/A
<i>P. kristinssonii</i> Vitik.	2	P1112	Canada: BC, <i>Goward 11-16</i> (UBC)	<b>MH758224</b>	–	<b>MH770020</b>	<b>MH770267</b>	<b>MH769766</b>	<b>MH770522</b>	VI
<i>P. kristinssonii</i> Vitik.	2	P1292	Canada: QC, <i>Gagnon s.n.</i> (QFA-0594989)	<b>MH758225</b>	KM005796	<b>MH770021</b>	<b>MH770268</b>	<b>MH769767</b>	<b>MH770523</b>	VI
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P0026	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23-03-03-9</i> (DUKE 0401843)	<b>MH758343</b>	KM005815	<b>MH770101</b>	<b>MH770358</b>	<b>MH769855</b>	<b>MH770638</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P0040	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23-03-03-23</i> (DUKE 0401841)	<b>MH758344</b>	–	–	–	–	<b>MH770639</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2050	Bolivia, <i>Kukwa 9194</i> (ex UGDA-L-17705, DUKE dupl. 0401840)	<b>MH758339</b>	–	–	–	–	<b>MH770640</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2058	Ecuador, <i>Yanez-Anabaca 2556</i> (CDF)	<b>MH758347</b>	<b>MH770878</b>	<b>MH770102</b>	<b>MH770359</b>	<b>MH769856</b>	<b>MH770641</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2075	Colombia, <i>Lücking 33693</i> (UDBC)	<b>MH758341</b>	<b>MH770879</b>	<b>MH770103</b>	<b>MH770360</b>	<b>MH769857</b>	<b>MH770642</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2078	Colombia, <i>Coca and Patino s.n.</i> (FAUC)	<b>MH758342</b>	–	–	–	–	<b>MH770643</b>	unique
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2198	Ecuador, <i>Truong 3956</i> (DUKE 0401842)	<b>MH758350</b>	<b>MH770880</b>	<b>MH770104</b>	<b>MH770361</b>	<b>MH769858</b>	<b>MH770644</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 1	6	P2199	Ecuador, <i>Truong 3958</i> (DUKE 0401838)	<b>MH758351</b>	–	–	–	–	<b>MH770645</b>	XL
<i>P. laciniata</i> (G.Merr.) Gyeln. 2	6	P2051	Bolivia, <i>Kukwa 9562</i> (ex UGDA-L-17724, DUKE dupl. 0401839)	<b>MH758340</b>	<b>MH770881</b>	<b>MH770105</b>	<b>MH770362</b>	<b>MH769859</b>	<b>MH770646</b>	XL
<i>P. lepidophora</i> (Vain.) Bitter 1	6	P1844	Canada: BC, <i>Goward s.n.</i> (UBC)	<b>MH758354</b>	KM005810	–	<b>MH770363</b>	<b>MH769860</b>	<b>MH770647</b>	XXX
<i>P. lepidophora</i> (Vain.) Bitter 1	6	P2124	Iceland, <i>Kristinsson 49244</i> (AMNH LA-29491)	<b>MH758353</b>	<b>MH770882</b>	<b>MH770106</b>	<b>MH770364</b>	<b>MH769861</b>	<b>MH770648</b>	XXX

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. lepidophora</i> (Vain.) Bitter 1	6	P2112	U.S.A.: NY, <i>Lendemera</i> 12047 (NY 0154474)	<b>MH758355</b>	<b>MH770883</b>	<b>MH770107</b>	<b>MH770365</b>	<b>MH769862</b>	<b>MH770649</b>	XLI
<i>P. lepidophora</i> (Vain.) Bitter 2	6	P2101	U.S.A.: AK, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357968)	<b>MH758352</b>	<b>MH770884</b>	<b>MH770108</b>	<b>MH770366</b>	<b>MH769863</b>	<b>MH770650</b>	XXIV
<i>P. lepidophora</i> (Vain.) Bitter 2	6	NP23	China: Ningxia, <i>Niu</i> 12-0085 (Ningxia Univ.)	<b>MH758356</b>	–	–	–	–	<b>MH770651</b>	XXX
<i>P. malacea</i> (Ach.) Funck	OG	P216	U.S.A.: AK, <i>Berg</i> 3072 (UBC)	–	<b>MH771011</b>	<b>MH770255</b>	<b>MH770506</b>	–	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	HOB4	Canada: BC, <i>O'Brien</i> 040605-10-1-1 (DUKE)	FJ709034	FJ709434	<b>MH770159</b>	<b>MH770419</b>	<b>MH769913</b>	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	HOB5	Canada: BC, <i>O'Brien</i> 040605-1-2 (DUKE)	KC437646	FJ709435	–	–	–	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	HOB6	Canada: BC, <i>O'Brien</i> 020708-0-9-1 (DUKE)	FJ709031	FJ709431	<b>MH770160</b>	<b>MH770420</b>	<b>MH769914</b>	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P0003	Iceland, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357981)	<b>MH758426</b>	KM005814	<b>MH770161</b>	<b>MH770421</b>	<b>MH769915</b>	KX923102	XVI
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P0086	Spain, <i>Vare</i> L1807 (H)	<b>MH758431</b>	<b>MH770932</b>	<b>MH770162</b>	<b>MH770422</b>	<b>MH769916</b>	<b>MH770712</b>	XVI
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P1005	Norway, <i>Magain s.n.</i> (LG)	<b>MH758428</b>	<b>MH770933</b>	–	<b>MH770423</b>	<b>MH769917</b>	<b>MH770713</b>	XIII
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2116	Canada: BC, <i>Truong s.n.</i> (DUKE 0401833)	<b>MH758421</b>	<b>MH770934</b>	<b>MH770163</b>	<b>MH770424</b>	<b>MH769918</b>	<b>MH770714</b>	XLIII
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2121	Portugal, <i>Vust</i> 3084 (G)	<b>MH758429</b>	<b>MH770935</b>	<b>MH770164</b>	<b>MH770425</b>	<b>MH769919</b>	<b>MH770715</b>	XVI
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2122	France: Corsica, <i>Vust</i> 6423 (G)	<b>MH758422</b>	<b>MH770936</b>	<b>MH770165</b>	<b>MH770426</b>	<b>MH769920</b>	<b>MH770716</b>	XVI
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2128	France: Corsica, <i>Vust</i> 6405 (G)	<b>MH758423</b>	<b>MH770937</b>	<b>MH770166</b>	<b>MH770427</b>	<b>MH769921</b>	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2131	France, <i>Magain s.n.</i> (DUKE 0401819)	<b>MH758424</b>	<b>MH770938</b>	<b>MH770167</b>	<b>MH770428</b>	<b>MH769922</b>	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2191	Iceland, <i>Heidmarsson</i> 2746 (AMNH LA-31754)	<b>MH758427</b>	<b>MH770939</b>	<b>MH770168</b>	<b>MH770429</b>	<b>MH769923</b>	<b>MH770717</b>	XVI
<i>P. membranacea</i> (Ach.) Nyl. 1	8	P2119	Greenland, <i>Vust</i> 6432 (G)	<b>MH758425</b>	–	–	–	–	–	N/A
<i>P. membranacea</i> (Ach.) Nyl. 2	8	P2135	Russia: Khabarovsk Territory, <i>Miadlikowska &amp; al. s.n.</i> (DUKE 0401812)	<b>MH758430</b>	<b>MH770940</b>	<b>MH770169</b>	<b>MH770430</b>	<b>MH769924</b>	–	N/A
<i>P. montis-wilhelmii</i> Sérus. & al. 1	7	P2156	Papua New Guinea, <i>Sérusiaux s.n.</i> (LG)	<b>MH758382</b>	<b>MH770912</b>	<b>MH770134</b>	<b>MH770399</b>	–	<b>MH770690</b>	V
<i>P. montis-wilhelmii</i> Sérus. & al. 2	7	P2157	Papua New Guinea, <i>Sérusiaux</i> 13984 (LG)	<b>MH758383</b>	–	<b>MH770135</b>	–	–	<b>MH770691</b>	XXXI
<i>P. "neocanina"</i> 1	7	HOB24	Canada: BC, <i>O'Brien</i> 020708-0-5-1 (DUKE)	FJ708922	FJ709443	–	–	–	–	N/A
<i>P. "neocanina"</i> 1	7	HOB25	Canada: BC, <i>O'Brien</i> 020708-66-5-2 (DUKE)	FJ708916	FJ709444	–	–	–	–	N/A
<i>P. "neocanina"</i> 1	7	HOB26	Canada: BC, <i>O'Brien</i> 020708-66-9-1 (DUKE)	FJ708917	FJ709438	–	<b>MH770382</b>	–	–	N/A
<i>P. "neocanina"</i> 1	7	HOB27	Canada: BC, <i>O'Brien</i> 040605-2-2 (DUKE)	KC437635	<b>MH770899</b>	<b>MH770120</b>	<b>MH770383</b>	<b>MH769875</b>	KC437877	XXX
<i>P. "neocanina"</i> 1	7	P0070	U.S.A.: NM, <i>Hollinger</i> 2460 (UBC)	<b>MH758395</b>	<b>MH770900</b>	–	–	–	KX923107	V
<i>P. "neocanina"</i> 1	7	P1107	Canada: BC, <i>Goward</i> 11-37 (UBC)	<b>MH758388</b>	–	–	–	–	<b>MH770672</b>	XXX
<i>P. "neocanina"</i> 1	7	P2001	Canada: MB, <i>Ahti</i> 63078 (H)	–	–	–	–	–	<b>MH770673</b>	V
<i>P. "neocanina"</i> 1	7	P2082	U.S.A.: NM, <i>Hollinger</i> 2402 (UBC)	<b>MH758396</b>	–	–	–	–	<b>MH770674</b>	V

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. "neocanina" 1</i>	7	P2098	U.S.A.: AK, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401834)	MH758384	MH770901	MH770121	MH770384	MH769876	MH770675	XXXIX
<i>P. "neocanina" 1</i>	7	P2192	U.S.A.: AK, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401816)	–	MH770902	MH770122	MH770385	MH769877	MH770676	XXXIIIa
<i>P. "neocanina" 1</i>	7	P2212	Canada: BC, <i>Goward 5306</i> (UBC)	MH758385	MH770903	MH770123	MH770386	MH769878	MH770677	XXX
<i>P. "neocanina" 2</i>	7	P0068	U.S.A.: NM, <i>Hollinger 2401</i> (UBC)	MH758394	MH770904	MH770124	MH770387	MH769879	KX923106	XXX
<i>P. "neocanina" 2</i>	7	P2089	U.S.A.: CO, <i>King L286</i> (NY)	MH758397	MH770905	–	MH770388	MH769880	MH770678	XXX
<i>P. "neocanina" 2</i>	7	P2202	U.S.A.: UT, <i>Truong 3995</i> (DUKE 0401867)	MH758398	MH770906	MH770125	MH770389	MH769881	MH770679	XXX
<i>P. "neocanina" 3</i>	7	P1405	Russia: Krasnoyarsk Territory, <i>Miadlikowska &amp; al. s.n.</i> (DUKE 0401821)	MH758390	MH770907	–	MH770390	MH769882	MH770680	V
<i>P. "neocanina" 3</i>	7	P1406	Russia: Krasnoyarsk Territory, <i>Miadlikowska s.n.</i> (DUKE 0401802)	MH758391	–	–	–	–	MH770681	V
<i>P. "neocanina" 3</i>	7	P1407	Russia: Krasnoyarsk Territory, <i>Miadlikowska s.n.</i> (DUKE 0401801)	MH758392	–	–	–	–	MH770682	V
<i>P. "neocanina" 3</i>	7	P1410	Russia: Krasnoyarsk Territory, <i>Miadlikowska s.n.</i> (DUKE 0401803)	MH758393	–	–	–	–	MH770683	V
<i>P. "neocanina" 3</i>	7	P2224	China: Yunnan, <i>Goffinet 9979</i> (CONN)	MH758386	MH770908	MH770126	MH770391	MH769883	MH770684	XXXIIc
<i>P. "neocanina" 4</i>	7	P0006	Iceland, <i>Miadlikowska &amp; Lutzoni 08.08.10-5</i> (DUKE 0401832)	MH758387	MH770909	MH770127	MH770392	MH769884	MH770685	XLII
<i>P. "neocanina" 4</i>	7	P2232	Norway, <i>Goward 02-1480</i> (UBC)	MH758389	MH770910	MH770128	MH770393	MH769885	MH770686	V
<i>P. "neorufescens" 1</i>	6	P2061	Mexico, <i>Barcenas-Peña 1229</i> (MEXU)	MH758362	MH770862	MH770088	MH770343	MH769840	MH770614	unique
<i>P. "neorufescens" 1</i>	6	P2072	Costa Rica, <i>Miadlikowska &amp; al. s.n.</i> (DUKE 0401820)	MH758360	MH770863	MH770089	MH770344	MH769841	MH770613	XXXVI
<i>P. "neorufescens" 2</i>	6	P2046	Bolivia, <i>Kukwa 8958</i> (ex UGDA-L-17704, DUKE dupl. 0401871)	MH758357	MH770864	MH770090	MH770345	MH769842	MH770614	VI
<i>P. "neorufescens" 2</i>	6	P2053	Peru, <i>Bennett s.n.</i> (WIS)	MH758363	MH770865	MH770091	MH770346	MH769843	MH770615	VI
<i>P. "neorufescens" 3</i>	6	P2184	Germany, Sipman 53601 (B 600127393)	MH758361	MH770866	MH770092	MH770347	MH769844	MH770616	unique
<i>P. "neorufescens" 4</i>	6	P2229	Canada: AB, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401823)	MH758359	MH770867	MH770093	MH770348	MH769845	MH770617	XXX
<i>P. "neorufescens" 5</i>	6	P2086	Canada: YT, <i>Lendemer 28945</i> (NY 0159332)	MH758358	MH770868	–	MH770349	MH769846	MH770618	XLI
<i>P. "neorufescens" 6</i>	6	P2205	U.S.A.: UT, <i>Truong 4023</i> (DUKE 0401868)	MH758364	MH770869	–	MH770350	MH769847	MH770619	XXXVIIIb
<i>P. "neorufescens" 6</i>	6	P2230	U.S.A.: OR, <i>Stone 8083.1</i> (DUKE 0158517)	MH758365	–	–	–	–	MH770620	XLI

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. papuana</i> Sérus. & al.	6	P1830= P2179	Papua New Guinea, <i>Sérusiaux 13656</i> (LG)	–	–	–	–	–	<b>MH770652</b>	XXXI
<i>P. papuana</i> Sérus. & al.	6	P2178	Papua New Guinea, <i>Sérusiaux 13655</i> (LG)	<b>MH758366</b>	<b>MH770885</b>	–	<b>MH770367</b>	–	<b>MH770653</b>	XXXI
<i>P. patagonica</i> Räsänen	2	P0076	Chile: Region XI, <i>Rubio 4077</i> (H)	<b>MH758227</b>	–	<b>MH770022</b>	<b>MH770269</b>	<b>MH769768</b>	KX923108	XXVIII
<i>P. patagonica</i> Räsänen	2	P2013	Chile: Region XII, <i>Stenroos 2427</i> (H)	<b>MH758228</b>	–	<b>MH770023</b>	<b>MH770270</b>	<b>MH769769</b>	<b>MH770524</b>	XXVIII
<i>P. patagonica</i> Räsänen	2	P2015	Chile: Region XII, <i>Tibell 18056</i> (UPS 74661)	–	–	–	–	–	<b>MH770525</b>	XXVIII
<i>P. patagonica</i> Räsänen	2	P2049	Argentina, <i>Tibell 17450</i> (UPS 40293)	<b>MH758226</b>	–	–	<b>MH770271</b>	–	<b>MH770526</b>	XXVIII
<i>P. polydactylon</i> (Neck.) Hoffm.	OG	P385	Norway; <i>Magain s.n.</i> (LG)	–	KM005765	KX365489	KX373621	KX373632	–	N/A
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P0084	U.S.A.: PA, <i>Lendemer 13556</i> (H)	<b>MH758276</b>	<b>MH770833</b>	<b>MH770059</b>	<b>MH770309</b>	<b>MH769803</b>	KX923111	XXXV
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P1106	Canada: BC, <i>Goward 7-187</i> (UBC)	<b>MH758277</b>	–	<b>MH770060</b>	–	<b>MH769804</b>	<b>MH770571</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P1486	U.S.A.: ME, <i>Harris 55417</i> (NY 01103744)	<b>MH758278</b>	–	–	–	<b>MH769806</b>	<b>MH770573</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P2003	Canada: MB, <i>Ahti 62717</i> (H)	<b>MH758279</b>	<b>MH770834</b>	–	<b>MH770310</b>	<b>MH769807</b>	<b>MH770574</b>	XXI
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P2028	U.S.A.: MO, <i>Harris 48184</i> (NY 01180306)	<b>MH758280</b>	<b>MH770835</b>	<b>MH770062</b>	<b>MH770311</b>	<b>MH769808</b>	<b>MH770575</b>	XXXV
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P2180	U.S.A.: OR, <i>McCune 29956</i> (OSC)	<b>MH758281</b>	<b>MH770836</b>	<b>MH770063</b>	<b>MH770312</b>	<b>MH769809</b>	<b>MH770576</b>	XXVII
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P2181	Canada: AB, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401809)	<b>MH758282</b>	<b>MH770837</b>	<b>MH770064</b>	<b>MH770313</b>	<b>MH769810</b>	<b>MH770577</b>	XXXIIIa
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1a	5	P1108	Canada: BC, <i>Goward 07-234a</i> (UBC)	<b>MH758283</b>	–	<b>MH770061</b>	–	<b>MH769805</b>	<b>MH770572</b>	XXVII
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 1b	5	P2204	U.S.A.: UT, <i>Truong 4045</i> (DUKE 0401866)	<b>MH758284</b>	<b>MH770838</b>	<b>MH770065</b>	<b>MH770314</b>	<b>MH769811</b>	<b>MH770578</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 2	5	P2004	Germany, <i>Türk 34539</i> (H)	<b>MH758285</b>	<b>MH770839</b>	–	<b>MH770315</b>	<b>MH769812</b>	<b>MH770579</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 2	5	P2132	France, <i>Magain s.n.</i> (LG)	<b>MH758286</b>	<b>MH770840</b>	<b>MH770066</b>	<b>MH770316</b>	<b>MH769813</b>	–	N/A
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 2	5	P2175	Switzerland, <i>Vust 1687</i> (G)	<b>MH758287</b>	<b>MH770841</b>	<b>MH770067</b>	<b>MH770317</b>	<b>MH769814</b>	<b>MH770580</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 3	5	HOB28	Canada: BC, <i>O'Brien 020708-62-1-3</i> (DUKE)	FJ709039	FJ709448	–	–	–	–	N/A

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 4	5	P0444	U.S.A.: KS, <i>Buck 46381</i> (NY 881403)	<b>MH758288</b>	<b>MH770842</b>	–	<b>MH770318</b>	<b>MH769815</b>	<b>MH770581</b>	XXXIV
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 4	5	P2027	U.S.A.: MO, <i>Harris 45692</i> (NY)	<b>MH758289</b>	<b>MH770843</b>	<b>MH770068</b>	<b>MH770319</b>	<b>MH769816</b>	<b>MH770582</b>	XXXIV
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 4	5	P2029	U.S.A.: AR, <i>Buck 46600</i> (NY 0050439)	<b>MH758290</b>	<b>MH770844</b>	<b>MH770069</b>	<b>MH770320</b>	<b>MH769817</b>	<b>MH770583</b>	XXXIV
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 4	5	P2085	U.S.A.: AR, <i>Majestyk 8060</i> (DUKE 0401845)	<b>MH758291</b>	<b>MH770845</b>	<b>MH770070</b>	<b>MH770321</b>	<b>MH769818</b>	<b>MH770584</b>	XXI
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 5a	5	P0192	India: Uttarakhand, <i>Divakar s.n.</i> (MAF)	<b>MH758293</b>	<b>MH770846</b>	<b>MH770071</b>	<b>MH770322</b>	<b>MH769819</b>	<b>MH770585</b>	XXXII
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 5a	5	P1287	China: Yunnan, <i>Rosentreter 15</i> (DUKE 0401846)	<b>MH758292</b>	<b>MH770847</b>	<b>MH770072</b>	<b>MH770323</b>	<b>MH769820</b>	<b>MH770586</b>	XXXVII
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 5b	5	HOB29	Canada: BC, <i>O'Brien 020708-70-1-4</i> (DUKE)	FJ709040	FJ709449	–	<b>MH770324</b>	<b>MH769821</b>	–	N/A
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 6	5	NP18	China: Ningxia, <i>Niu 12-0015</i> (Ningxia Univ.)	–	–	–	–	–	<b>MH770587</b>	XXXVIb
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 6	5	NP19	China: Ningxia, <i>Niu 12-0016</i> (Ningxia Univ.)	–	–	–	–	–	<b>MH770588</b>	XXXVIb
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 6	5	P0834	Norway, <i>Magain s.n.</i> (LG)	<b>MH758294</b>	–	–	<b>MH770325</b>	<b>MH769822</b>	–	N/A
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 6	5	P2167	China: Yunnan, <i>Miadlikowska s.n.</i> (DUKE 0401815)	<b>MH758295</b>	<b>MH770848</b>	–	<b>MH770326</b>	<b>MH769823</b>	<b>MH770589</b>	XXXIIc
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 7	5	P0075	Norway, <i>Ahti 65831</i> (H)	<b>MH758296</b>	KM005825	<b>MH770073</b>	<b>MH770327</b>	<b>MH769824</b>	KX923104	XLII
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 7	5	P2220	U.S.A.: CA, <i>McCune 30357</i> (OSC)	<b>MH758297</b>	<b>MH770849</b>	<b>MH770074</b>	<b>MH770328</b>	<b>MH769825</b>	<b>MH770590</b>	unique
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2087	U.S.A.: UT, <i>Buck 55054</i> (NY01136425)	<b>MH758298</b>	<b>MH770850</b>	<b>MH770075</b>	<b>MH770329</b>	<b>MH769826</b>	<b>MH770591</b>	XXXVIIIb
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2185	Canada: BC, <i>Goward 5302</i> (UBC)	<b>MH758299</b>	<b>MH770851</b>	<b>MH770076</b>	<b>MH770330</b>	<b>MH769827</b>	<b>MH770592</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2206	U.S.A.: UT, <i>Truong 4048</i> (DUKE 040189)	<b>MH758300</b>	–	<b>MH770077</b>	<b>MH770331</b>	<b>MH769828</b>	<b>MH770593</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2207	U.S.A.: UT; <i>Truong 4027</i> (DUKE 0401847)	<b>MH758301</b>	–	–	–	–	<b>MH770594</b>	XXX

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2208	U.S.A.: UT, <i>Truong 4001</i> (DUKE 0401848)	<b>MH758302</b>	<b>MH770852</b>	<b>MH770078</b>	<b>MH770332</b>	<b>MH769829</b>	<b>MH770595</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2210	U.S.A.: UT, <i>Truong 4011</i> (DUKE 0401850)	<b>MH758303</b>	–	–	–	–	<b>MH770596</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2214	Canada: BC, <i>Goward 5300</i> (UBC)	<b>MH758305</b>	<b>MH770853</b>	<b>MH770079</b>	<b>MH770333</b>	<b>MH769830</b>	<b>MH770597</b>	VI
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 8	5	P2215	U.S.A.: OR, <i>Hardman s.n.</i> (DUKE 0158521)	<b>MH758304</b>	<b>MH770854</b>	<b>MH770080</b>	<b>MH770334</b>	<b>MH769831</b>	<b>MH770598</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 9	5	NP20	China: Ningxia, <i>Niu 12-0005</i> (Ningxia Univ.)	<b>MH758307</b>	<b>MH770855</b>	<b>MH770081</b>	<b>MH770335</b>	<b>MH769832</b>	<b>MH770599</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 9	5	NP21	China: Ningxia, <i>Niu 12-0004</i> (Ningxia Univ.)	<b>MH758306</b>	–	–	–	–	<b>MH770600</b>	unique
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 9	5	P0073	Austria, <i>Türk 37593</i> (H)	<b>MH758310</b>	KM005824	<b>MH770082</b>	<b>MH770336</b>	<b>MH769833</b>	KX923103	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 9	5	P0419	Russia: Dagestan, <i>Urbanavichus 0902150</i> (H)	<b>MH758308</b>	<b>MH770856</b>	–	<b>MH770337</b>	<b>MH769834</b>	<b>MH770590</b>	XXX
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 9	5	P2127	Switzerland, <i>Vust s.n.</i> (G)	<b>MH758309</b>	<b>MH770857</b>	<b>MH770083</b>	<b>MH770338</b>	<b>MH769835</b>	<b>MH770591</b>	V
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 10a	5	P2000	U.S.A.: CA, <i>Arnold 73</i> (YOSE 221393)	<b>MH758311</b>	<b>MH770829</b>	–	<b>MH770305</b>	<b>MH769799</b>	<b>MH770567</b>	unique
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 10a	5	P2168	U.S.A.: CA, <i>McCune 28024</i> (OSC)	<b>MH758313</b>	<b>MH770830</b>	<b>MH770056</b>	<b>MH770306</b>	<b>MH769800</b>	<b>MH770568</b>	unique
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 10a	5	P2187	U.S.A.: CA, <i>McCune 29670</i> (OSC)	<b>MH758314</b>	<b>MH770831</b>	<b>MH770057</b>	<b>MH770307</b>	<b>MH769801</b>	<b>MH770569</b>	VI
<i>P. ponojensis</i> Gyeln./ <i>monticola</i> Vitik. 10b	5	P2114	U.S.A.: UT, <i>Truong &amp; Magain s.n.</i> (DUKE 0357983)	<b>MH758312</b>	<b>MH770832</b>	<b>MH770058</b>	<b>MH770308</b>	<b>MH769802</b>	<b>MH770570</b>	XXX
<i>P. praetextata</i> (Flörke ex Sommerf.) 9 Zopf	HOB18	Canada: BC, <i>O'Brien 030611-0-0-5</i> (DUKE)	FJ708905	FJ709451	<b>MH770229</b>	<b>MH770483</b>	<b>MH769983</b>	–	–	N/A
<i>P. praetextata</i> (Flörke ex Sommerf.) 9 Zopf	HOB19	Canada: BC, <i>O'Brien 020708-31-9-2</i> (DUKE)	FJ708904	FJ709450	<b>MH770230</b>	<b>MH770484</b>	<b>MH769984</b>	–	–	N/A
<i>P. praetextata</i> (Flörke ex Sommerf.) 9 Zopf	HOB20	Canada: BC, <i>O'Brien 030611-0-5-8</i> (DUKE)	FJ708906	FJ709452	–	–	–	–	–	N/A
<i>P. praetextata</i> (Flörke ex Sommerf.) 9 Zopf	P0420	Serbia, <i>Uotila 48419</i> (H)		<b>MH758520</b>	–	–	–	<b>MH769985</b>	<b>MH770788</b>	V

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P0570	Norway, <i>Magain s.n.</i> (LG)	<b>MH758515</b>	KM005829	<b>MH770231</b>	<b>MH770485</b>	<b>MH769986</b>	<b>MH770789</b>	XLII
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P0622	Norway, <i>Magain s.n.</i> (LG)	<b>MH758516</b>	<b>MH770995</b>	<b>MH770232</b>	<b>MH770486</b>	<b>MH769987</b>	–	N/A
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P0842	Norway, <i>Magain s.n.</i> (LG)	<b>MH758517</b>	–	–	–	–	<b>MH770790</b>	XLII
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P1514	China: Yunnan, <i>Miadlikowska s.n.</i> (DUKE 0357962)	<b>MH758512</b>	–	–	–	–	<b>MH770791</b>	XXXIIa
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P1515	China: Yunnan, <i>Miadlikowska s.n.</i> (DUKE 0357961)	<b>MH758513</b>	<b>MH770996</b>	<b>MH770233</b>	<b>MH770487</b>	<b>MH769988</b>	<b>MH770792</b>	XXXIIa
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2025	Russia: Karachaevo-Cherkesiya Republic, <i>Zhurbenko s.n.</i> (DUKE 0357996)	<b>MH758518</b>	<b>MH770997</b>	<b>MH770234</b>	<b>MH770488</b>	<b>MH769989</b>	<b>MH770793</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2088	U.S.A.: NY, <i>Buck 54040</i> (NY 01077051)	<b>MH758521</b>	<b>MH770998</b>	<b>MH770235</b>	<b>MH770489</b>	<b>MH769990</b>	<b>MH770794</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2091	Canada: ON, <i>Harris 56462</i> (DUKE 0159321)	<b>MH758510</b>	<b>MH770999</b>	<b>MH770236</b>	–	–	–	N/A
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2092	U.S.A.: ME, <i>Harris 53056</i> (DUKE 0138948)	<b>MH758522</b>	<b>MH771000</b>	<b>MH770237</b>	<b>MH770490</b>	<b>MH769991</b>	<b>MH770795</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2096	India: Himachal Pradesh, <i>Divakar s.n.</i> (MAF)	<b>MH758514</b>	<b>MH771001</b>	–	<b>MH770491</b>	<b>MH769992</b>	<b>MH770796</b>	XXXIIa
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2226	U.S.A.: MI, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357993)	<b>MH758523</b>	<b>MH771002</b>	<b>MH770238</b>	<b>MH770492</b>	<b>MH769993</b>	<b>MH770797</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2227	Russia: Khabarovsk Territory, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401831)	<b>MH758519</b>	<b>MH771003</b>	<b>MH770239</b>	<b>MH770493</b>	<b>MH769994</b>	<b>MH770798</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2231	Canada: AB, J. <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357995)	<b>MH758511</b>	–	–	–	–	<b>MH770799</b>	V
<i>P. praetextata</i> (Flörke ex Sommerf.) Zopf	9	P2233	U.S.A.: AZ, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401835)	<b>MH758524</b>	<b>MH771004</b>	<b>MH770240</b>	<b>MH770494</b>	<b>MH769995</b>	<b>MH770800</b>	XXXVI
<i>P. retifoveata</i> Vitik.	1	P0074	Russia: Sakha Republic, <i>Ahti 61821</i> (H)	<b>MH758213</b>	–	<b>MH770010</b>	<b>MH770257</b>	<b>MH769757</b>	<b>MH770508</b>	XXXIIIa
<i>P. retifoveata</i> Vitik.	1	P1839= P1030	Norway, <i>Magain s.n.</i> (LG)	<b>MH758214</b>	–	–	–	–	<b>MH770509</b>	XXXIIIa
<i>P. retifoveata</i> Vitik.	1	P2100	U.S.A.: AK, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357984)	<b>MH758215</b>	–	<b>MH770011</b>	<b>MH770258</b>	<b>MH769758</b>	<b>MH770510</b>	XXXIIIa
<i>P. rufescens</i> (Weiss) Humb. 1	6	P1111	Canada: BC, <i>Goward 10-71</i> (UBC)	<b>MH758369</b>	–	–	–	–	<b>MH770654</b>	XXX
<i>P. rufescens</i> (Weiss) Humb. 1	6	P2002	Denmark, <i>Hansen s.n.</i> (H)	<b>MH758368</b>	<b>MH770886</b>	–	<b>MH770368</b>	<b>MH769864</b>	<b>MH770655</b>	XXV

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. rufescens</i> (Weiss) Humb. 1	6	P2043	Chile: Region XII, <i>Goffinet 7076</i> (CONN)	MH758367	MH770887	MH770109	MH770369	MH769865	MH770656	XXV
<i>P. rufescens</i> (Weiss) Humb. 1	6	P2083	U.S.A.: NC, <i>Hollinger 2711</i> (UBC)	MH758370	MH770888	MH770110	MH770370	MH769866	MH770657	XXXV
<i>P. rufescens</i> (Weiss) Humb. 1	6	P2203	U.S.A.: UT, <i>Truong 4044</i> (DUKE 0401869)	–	MH770889	MH770111	MH770371	MH769867	MH770658	XXXIII
<i>P. rufescens</i> (Weiss) Humb. 2	6	P2071	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23.03.03-3</i> (DUKE 0401870)	MH758371	MH770890	–	MH770372	MH769868	MH770659	XL
<i>P. rufescentiformis</i> (Gyeln.) C.W.Dodge	6	P2142	Kenya, <i>Moberg 3983</i> (UPS L-536565)	MH758372	–	MH770112	MH770373	–	MH770660	XXXIX
<i>P. rufescentiformis</i> (Gyeln.) C.W.Dodge	6	P2143	Kenya, <i>Moberg 4324</i> (UPS L-536552)	MH758373	MH770891	MH770113	MH770374	–	MH770661	XXXVII
<i>P. scabrosa</i> Th. Fr.	OG	P107	Canada: QC, <i>Lutzoni &amp; al. s.n.</i> (DUKE 0401873)	–	KM005791	–	MF947024	MF946916	–	N/A
<i>P. soredians</i> Vitik.	6	P2020	Ecuador, <i>Kalb 39784</i> (DUKE)	MH758346	–	–	–	–	MH770662	XXVIc
<i>P. soredians</i> Vitik.	6	P2068	Costa Rica, <i>Miadlikowska &amp; Lutzoni 22.03.03-2</i> (DUKE 0401844)	MH758345	–	–	–	–	MH770663	XL
<i>P. soredians</i> Vitik.	6	P2151	Ecuador, <i>Kalb 39787</i> (DUKE)	MH758348	MH770892	MH770114	MH770375	–	MH770664	XL
<i>P. soredians</i> Vitik.	6	P2152	Ecuador, <i>Kalb 39785</i> (DUKE)	MH758349	MH770893	MH770115	MH770376	MH769869	MH770665	XXVIc
<i>P. sorediifera</i> (Nyl.) Vitik.	4	P2146	Australia, NSW, <i>Streimann 50996</i> (H)	MH758255	–	MH770041	MH770290	MH769786	MH770550	V
<i>P. sorediifera</i> (Nyl.) Vitik.	4	P2173	Australia: ACT, <i>Streimann &amp; Curnow 34999</i> (ex CBG- 9507177 dupl. H)	MH758256	–	MH770042	MH770291	–	MH770551	V
<i>P. sp.</i>	6	NP31	China: Ningxia, <i>Niu 12-0064</i> (Ningxia Univ.)	–	–	–	–	–	MH770666	XXX
<i>P. sp. 13</i>	1	P2225	China: Yunnan, <i>Goffinet 9974</i> (CONN)	MH758216	–	MH770012	–	MH769759	MH770511	VIIIa
<i>P. sp. 14</i>	2	P1534	Chile: Region XII, <i>Buck 47968</i> (NY)	MH758217	MH770817	–	MH770272	–	MH770527	XXIII
<i>P. sp. 14</i>	2	P2039	Chile: Region XII, <i>Shaw 17848</i> (DUKE 0401861)	MH758218	MH770818	MH770024	MH770273	MH769770	MH770528	XXIII
<i>P. sp. 14</i>	2	P2062	Chile: Region X, <i>Wheeler &amp; Nelson 5191</i> (CONC)	MH758219	MH770819	–	MH770274	MH769771	MH770529	XXIII
<i>P. sp. 15</i>	6	P0432	Ecuador, <i>Frisch 96/Eq101</i> (H)	MH758375	MH770894	MH770116	MH770377	MH769870	MH770667	XL
<i>P. sp. 15</i>	6	P2153	Colombia, <i>Lücking 34027</i> (UDBC)	MH758374	MH770895	MH770117	MH770378	MH769871	MH770668	XL
<i>P. sp. 16</i>	2	P2186	U.S.A.: OR, <i>McCune 31966</i> (OSC)	MH758235	–	MH770025	MH770275	MH769772	MH770530	XXX
<i>P. sp. 17</i>	5	P1472	Peru, <i>Miadlikowska s.n.</i> (DUKE)	MH758316	–	–	–	–	MH770603	XXVIb
<i>P. sp. 17</i>	5	P1473	Peru, <i>Lutzoni 05.22.2012-1</i> (DUKE 0357994)	MH758317	–	–	–	–	MH770604	XXVIb
<i>P. sp. 17</i>	5	P1475	Peru, <i>Miadlikowska s.n.</i> (DUKE)	–	–	–	–	–	MH770605	XXVIb



Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. sp. 17</i>	5	P1476	Peru, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357963)	<b>MH758318</b>	–	–	–	–	<b>MH770606</b>	unique
<i>P. sp. 17</i>	5	P1477	Peru, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357964)	<b>MH758319</b>	–	–	–	–	<b>MH770607</b>	unique
<i>P. sp. 17</i>	5	P1728	Peru, <i>Lutzoni 05.22.2012-8</i> (DUKE 0401804)	<b>MH758320</b>	<b>MH770858</b>	<b>MH770084</b>	<b>MH770339</b>	<b>MH769836</b>	<b>MH770610</b>	XXVIb
<i>P. sp. 17</i>	5	P2164	Peru, <i>Miadlikowska s.n.</i> (DUKE 0357990)	<b>MH758321</b>	<b>MH770859</b>	<b>MH770085</b>	<b>MH770340</b>	<b>MH769837</b>	<b>MH770611</b>	XXVIb
<i>P. sp. 17</i>	5	P2165	Peru, <i>Lutzoni s.n.</i> (DUKE 0401811)	–	<b>MH770860</b>	<b>MH770086</b>	<b>MH770341</b>	<b>MH769838</b>	<b>MH770612</b>	XXVIb
<i>P. sp. 17</i>	5	P2195	Ecuador, <i>Truong 3976</i> (DUKE 0401864)	<b>MH758315</b>	<b>MH770861</b>	<b>MH770087</b>	<b>MH770342</b>	<b>MH769839</b>	<b>MH770613</b>	XXXIX
<i>P. sp. 18</i>	9	P1413	Russia: Krasnoyarsk Territory, <i>Zhurbenko s.n.</i> (DUKE 0357978)	<b>MH758527</b>	<b>MH771005</b>	<b>MH770241</b>	–	<b>MH769996</b>	<b>MH770801</b>	V
<i>P. sp. 18</i>	9	P2094	India: Uttarakhand, <i>Divakar s.n.</i> (MAF)	<b>MH758526</b>	<b>MH771006</b>	<b>MH770242</b>	<b>MH770495</b>	<b>MH769997</b>	<b>MH770802</b>	XXXII
<i>P. sp. 19</i>	9	P0078	U.S.A.: OR, <i>McCune 31048</i> (OSC)	<b>MH758528</b>	<b>MH771007</b>	<b>MH770243</b>	<b>MH770496</b>	<b>MH769998</b>	<b>MH770803</b>	VI
<i>P. sp. 19</i>	9	P1230	U.S.A.: OR, <i>McCune 26686</i> (OSC)	<b>MH758529</b>	<b>MH771008</b>	<b>MH770244</b>	<b>MH770497</b>	<b>MH769999</b>	<b>MH770804</b>	VI
<i>P. sp. 19</i>	9	P2030	U.S.A.: OR, <i>McCune 30122</i> (OSC)	<b>MH758530</b>	<b>MH771009</b>	<b>MH770245</b>	<b>MH770498</b>	<b>MH770000</b>	<b>MH770805</b>	VI
<i>P. sp. 20</i>	9	HOB14	Canada: BC, <i>O'Brien 030611-10-0-4</i> (DUKE)	FJ708909	FJ709455	<b>MH770246</b>	<b>MH770499</b>	<b>MH770001</b>	KC437728	VI
<i>P. sp. 20</i>	9	HOB15	Canada: BC, <i>O'Brien 020708-62-1-1</i> (DUKE)	FJ708907	FJ709453	<b>MH770247</b>	<b>MH770500</b>	<b>MH770002</b>	–	N/A
<i>P. sp. 20</i>	9	HOB16	Canada: BC, <i>O'Brien 020708-66-1-4</i> (DUKE)	FJ708908	FJ709454	<b>MH770248</b>	<b>MH770501</b>	<b>MH770003</b>	–	N/A
<i>P. sp. 20</i>	9	HOB17	Canada: BC, <i>O'Brien 030611-10-5-3</i> (DUKE)	FJ708910	FJ709456	<b>MH770249</b>	–	<b>MH770004</b>	–	N/A
<i>P. sp. 21</i>	9	P2218	U.S.A.: AZ, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0401825)	<b>MH758525</b>	<b>MH771010</b>	<b>MH770250</b>	<b>MH770502</b>	<b>MH770005</b>	<b>MH770806</b>	XXXVI
<i>P. sp. 22</i>	9	P1841	Colombia, <i>Lücking MPNNC174</i> (UDBC)	<b>MH758496</b>	–	–	–	–	<b>MH770808</b>	XXXIX
<i>P. sp. 22</i>	9	P0926	Colombia, <i>Lücking MPNNC122</i> (UDBC)	<b>MH758495</b>	–	<b>MH770251</b>	<b>MH770503</b>	<b>MH770006</b>	<b>MH770807</b>	VI
<i>P. sp. 22</i>	9	P2054	Peru, <i>Bennett s.n.</i> (WIS)	<b>MH758498</b>	–	<b>MH770252</b>	–	<b>MH770007</b>	<b>MH770809</b>	XXXIXd
<i>P. sp. 22</i>	9	P2074	Peru, <i>Miadlikowska s.n.</i> (DUKE 0357976)	<b>MH758499</b>	–	<b>MH770253</b>	<b>MH770504</b>	–	<b>MH770810</b>	XXXIX
<i>P. sp. 22</i>	9	P2077	Colombia, <i>Lücking MPNNC92m</i> (UDBC)	<b>MH758497</b>	–	<b>MH770254</b>	<b>MH770505</b>	<b>MH770008</b>	<b>MH770811</b>	XXXIX
<i>P. spuriella</i> Vain.	6	P1648	Peru, <i>Maldonado 14</i> (NY)	<b>MH758329</b>	<b>MH770871</b>	<b>MH770095</b>	<b>MH770352</b>	<b>MH769849</b>	<b>MH770627</b>	unique
<i>P. spuriella</i> Vain.	6	P1731	Peru, <i>Lutzoni s.n.</i> (DUKE)	<b>MH758336</b>	–	–	–	–	<b>MH770636</b>	unique
<i>P. tereziana</i> Gyeln.	8	P0433	Australia: VIC, <i>Streimann 50914</i> (H)	<b>MH758432</b>	<b>MH770941</b>	<b>MH770170</b>	<b>MH770431</b>	<b>MH769925</b>	<b>MH770718</b>	XX
<i>P. tereziana</i> Gyeln.	8	P2021	Australia: ACT, <i>Kalb 30730</i> (DUKE)	<b>MH758433</b>	<b>MH770942</b>	<b>MH770171</b>	<b>MH770432</b>	<b>MH769926</b>	<b>MH770719</b>	XX
<i>P. tereziana</i> Gyeln.	8	P2155	New Zealand, <i>Tibell 9563</i> (UPS L-536309)	<b>MH758437</b>	<b>MH770943</b>	–	–	–	–	N/A
<i>P. tereziana</i> Gyeln.	8	P2171	Australia: NSW, <i>Streimann 63484</i> (CANB 604582.1)	<b>MH758434</b>	<b>MH770944</b>	<b>MH770172</b>	<b>MH770433</b>	<b>MH769927</b>	<b>MH770720</b>	XX

Table S1. Continued.

Taxon	Clade	DNA id.	Voucher/Published source	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	<i>rbcLX</i>	<i>rbcLX</i> phylogroup/haplotype
<i>P. tereziana</i> Gyeln.	8	P2172	Australia: NSW, <i>Streimann 60382</i> (CBG 9906411)	<b>MH758435</b>	<b>MH770945</b>	<b>MH770173</b>	<b>MH770434</b>	<b>MH769928</b>	<b>MH770721</b>	XX
<i>P. tereziana</i> Gyeln.	8	P2174	Australia: VIC, <i>Elix 39629</i> (CANB 00792024)	<b>MH758436</b>	<b>MH770946</b>	<b>MH770174</b>	<b>MH770435</b>	<b>MH769929</b>	<b>MH770722</b>	XX
<i>P. ulcerata</i> Müll. Arg.	4	P1852	Philippines, <i>Kalb &amp; Schrogl s.n.</i> (DUKE)	<b>MH758266</b>	–	–	–	–	–	N/A
<i>P. ulcerata</i> Müll. Arg. 1	4	P0041	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23.03.03-24</i> (DUKE 0357988)	<b>MH758262</b>	–	–	–	–	<b>MH770553</b>	XXXIX
<i>P. ulcerata</i> Müll. Arg. 1	4	P0043	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23.03.03-26</i> (DUKE 0357989)	<b>MH758263</b>	–	–	–	–	KX923115	XXXIXb
<i>P. ulcerata</i> Müll. Arg. 1	4	P0048	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23.03.03-31</i> (DUKE 0357987)	<b>MH758264</b>	–	<b>MH770043</b>	<b>MH770292</b>	<b>MH769787</b>	<b>MH770554</b>	XXXIXc
<i>P. ulcerata</i> Müll. Arg. 1	4	P2063	Chile: Region X, <i>Wheeler &amp; Nelson 5444</i> (CONC)	<b>MH758259</b>	–	<b>MH770044</b>	<b>MH770293</b>	<b>MH769788</b>	<b>MH770555</b>	V
<i>P. ulcerata</i> Müll. Arg. 1	4	P2105	Peru, <i>Lutzoni s.n.</i> (DUKE 0357986)	<b>MH758265</b>	–	<b>MH770045</b>	<b>MH770294</b>	<b>MH769789</b>	<b>MH770556</b>	unique
<i>P. ulcerata</i> Müll. Arg. 1	4	P2148	Colombia, <i>Lücking DNA1190</i> (UDBC)	<b>MH758260</b>	–	<b>MH770046</b>	<b>MH770295</b>	<b>MH769790</b>	<b>MH770557</b>	XXXIXc
<i>P. ulcerata</i> Müll. Arg. 1	4	P0033	Costa Rica, <i>Miadlikowska &amp; Lutzoni 23-03-03-16</i> (DUKE 0357992)	<b>MH758261</b>	–	–	–	–	<b>MH770552</b>	XXXIX
<i>P. ulcerata</i> Müll. Arg. 2	4	P2154= P1838	Brazil: Rio, <i>Marcelli &amp; al. 25096</i> (H)	<b>MH758258</b>	–	<b>MH770047</b>	<b>MH770296</b>	<b>MH769791</b>	<b>MH770558</b>	N/A
<i>P. ulcerata</i> Müll. Arg. 2	4	P2216	Australia: NSW, <i>Elix 35980</i> (ex CBG 9616513 dupl. H)	<b>MH758257</b>	–	<b>MH770048</b>	<b>MH770297</b>	<b>MH769792</b>	<b>MH770559</b>	V
<i>P. vainioi</i> Gyeln.	4	P2080	Colombia, <i>Aguirre &amp; Sipman 5570</i> (B)	<b>MH758267</b>	–	–	–	–	<b>MH770560</b>	XXVIa
<i>P. vainioi</i> Gyeln.	4	P2115	Colombia, <i>Miadlikowska s.n.</i> (ANDES)	<b>MH758268</b>	–	<b>MH770049</b>	<b>MH770298</b>	<b>MH769793</b>	<b>MH770561</b>	XXVIa
<i>P. vainioi</i> Gyeln.	4	P2196	Ecuador, <i>Truong 3983</i> (DUKE 0401860)	<b>MH758269</b>	–	<b>MH770050</b>	<b>MH770299</b>	<b>MH769794</b>	<b>MH770562</b>	XXVIa
<i>P. wulingensis</i> L.F.Han & S.Y.Guo	6	P1348	Canada: QC, <i>Gagnon s.n.</i> (QFA 0595019)	<b>MH758377</b>	<b>MH770896</b>	–	<b>MH770379</b>	<b>MH769872</b>	<b>MH770669</b>	XXXIIIb
<i>P. wulingensis</i> L.F.Han & S.Y.Guo	6	P2031	Russia: Krasnoyarsk Territory, <i>Miadlikowska s.n.</i> (DUKE 0357978)	<b>MH758378</b>	<b>MH770897</b>	<b>MH770118</b>	<b>MH770380</b>	<b>MH769873</b>	<b>MH770670</b>	XXXIIIb
<i>P. wulingensis</i> L.F.Han & S.Y.Guo	6	P2188	Canada: AB, <i>Miadlikowska &amp; Lutzoni s.n.</i> (DUKE 0357979)	<b>MH758376</b>	<b>MH770898</b>	<b>MH770119</b>	<b>MH770381</b>	<b>MH769874</b>	<b>MH770671</b>	V

**Table S2.** Support values for species delimitations resulting from bGMYC analyses on each locus of each clade analyzed separately, and for bPTP analyses on the concatenated dataset, for clades 4–9. NA (not applicable) indicates species that were not represented in the matrix, whereas slash indicates species, which were not delimited for a given locus. alt = alternative.

Clade 4/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
<i>vainioi</i>	P2115, P2196	0.92	NA	0.98	0.92	0.89	0.99
<i>extenuata</i> 1	P2064, P2104, P2103, P2111	0.79	NA	0.85	0.39	0.67	0.99
<i>extenuata</i> 1b	P2064	/	NA	/	0.47	/	/
<i>extenuata</i> 2	P0943, P2057	0.91	NA	0.93	0.6	0.82	/
<i>didactyla</i> 1	P2140, P2144, P2200	0.56	NA	0.79	0.43		0.86
<i>didactyla</i> 3	P2110, P2109	0.66	NA	0.94	NA	0.88	0.99
<i>castanea</i>	P2102	0.71	NA	0.96	0.92	NA	1
<i>didactyla</i> 2	NP2	0.65	NA	0.95	0.73	NA	1
<i>sorediifera</i>	P2146, P2173	0.42	NA	0.94	0.76	0.8	0.99
<i>ulcerata</i> 2	P2216, P2154	/	NA	0.25	/	/	0.84
<i>ulcerata</i> 2 alt1	P2154	0.69	NA	0.23	0.64	0.6	/
<i>ulcerata</i> 2 alt2	P2216	/	NA	0.23	0.77	0.47	/
<i>ulcerata</i> 1	P2063, P2148, P0048, P2105	/	NA	/	/	/	0.79
<i>ulcerata</i> 1 alt1	P2063, P2148, P0048, P2105, P2216	0.45	NA	/	/	/	/
Clade 5/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
<i>ponojensis/monticola</i> 6	P2167, P0834	0.55	0.76	NA	0.55	0.88	0.93
<i>ponojensis/monticola</i> 7	P2220, P0075	0.93	0.35	0.61	0.75	0.57	0.91
<i>ponojensis/monticola</i> 8	P2215, P2185, P2087, P2208, P2206, P2214	/	0.62	0.36	/	0.74	0.79
<i>ponojensis/monticola</i> 8 alt4	P2185, P2087, P2208, P2206, P2214	/	/	/	0.37	/	/
<i>ponojensis/monticola</i> 8 alt3	P2215, P2185, P2087, P2208, P2214	/	/	0.36	/	/	/
<i>ponojensis/monticola</i> 8 alt1	P2185, P2214, P2215	0.7	/	/	/	/	/
<i>ponojensis/monticola</i> 8 alt2	P2087, P2208, P2206	0.45	/	/	/	/	/
<i>ponojensis/monticola</i> 9	P0419, P2127, P0073, NP20	0.81	0.4	0.46	0.67	0.52	0.9
<i>ponojensis/monticola</i> 1a+1b	P2204, P2028, P2181, P1106, P2003, P1108, P0084, P1486, P2180	/	/	/	/	/	0.75
<i>ponojensis/monticola</i> 1b	P2204	/	0.21	0.36	/	/	/
<i>ponojensis/monticola</i> 2	P2004, P2175, P2132	/	0.19	0.37	0.2	0.75	0.82
<i>antarctica</i>	P0077, P2065, P2044, P0442, P2034, P1805	/	/	0.32	0.2	/	0.6
<i>antarctica</i> 1	P2065, P2044, P0442, P2034, P1805	0.42	/	/	/	0.36	/
<i>ponojensis/monticola</i> 3	HOB28	0.91	0.43	NA	NA	NA	0.97
<i>ponojensis/monticola</i> 5b	HOB29	/	0.33	0.47	/	/	0.87
<i>ponojensis/monticola</i> 5a	P0192, P1287	/	0.35	0.46	/	/	0.8
<i>ponojensis/monticola</i> 5a+5b	P0192, P1287, HOB29	0.86	/	/	0.76	0.71	/
sp. 17	P2165, P1728, P2164, P2195	0.62	0.57	/	0.4	0.84	/
sp. 17 alt1	P2165, P1728	/	/	0.42	0.41	/	0.58
sp. 17 alt2	P2164, P2195	/	/	0.41	/	/	0.59
<i>ponojensis/monticola</i> 10	P2000, P2187, P2168, P2114	/	0.53	/	/	0.53	/
<i>ponojensis/monticola</i> 10a	P2000, P2187, P2168	0.8	/	0.43	0.31	/	/
<i>ponojensis/monticola</i> 10b	P2114	0.86	/	0.51	0.47		0.73
<i>ponojensis/monticola</i> 10a alt1	P2000, P2187	/	/	/	/	/	0.49
<i>ponojensis/monticola</i> 10a alt2	P2168	/	/	/	/	/	0.53
<i>ponojensis/monticola</i> 4a	P0444, P2029	0.6	/	/	/	/	0.57

Table S2. Continued.

<i>ponojensis/monticola</i> 4b	P2027, P2085	0.62	/	/	/	/	0.56
<i>ponojensis/monticola</i> 4	P0444, P2029, P2027, P2085	/	0.54	0.7	0.88	0.84	/
Clade 6/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
<i>soredians</i>	P2151, P2152	0.39	0.62	0.87	0.89	0.43	0.96
sp. 15	P2153, P0432	0.39	0.58	/	0.47	0.39	0.96
<i>wulingensis</i>	P2188, P1348, P2031	0.48	0.69	0.68	0.87	/	0.94
<i>rufescentiformis</i>	P2142, P2143	0.62	0.4	0.97	0.92	/	0.97
<i>granulosa</i> + <i>papuana</i>	P2176, P2178	/	/	/	/	/	0.97
<i>granulosa</i>	P2176, P2178	0.39	0.44	0.85	0.63	0.74	/
<i>papuana</i>	P2178	0.34	0.44	NA	0.63	NA	/
<i>laciniata</i> 2	P2051	/	0.32	0.73	0.72	0.29	1
<i>laciniata</i> 1	P2075, P2058, P2198, P0026	/	0.32	0.62	0.72	0.29	0.96
<i>laciniata</i> 1+2	P2075, P2058, P2198, P0026, P2051	0.34	/	/	/	/	/
“ <i>neorufescens</i> ” 6	P2205	0.95	0.83	NA	0.91	0.8	1
“ <i>neorufescens</i> ” 1–5	P2046, P2229, P2072, P2184, P2061, P2053, P2086	/	0.33	/	/	0.43	/
“ <i>neorufescens</i> ” 1–4	P2046, P2229, P2072, P2184, P2061, P2053	0.57	/	/	/	/	
“ <i>neorufescens</i> ” 2	P2046, P2053	/	/	0.5	0.53	/	0.97
“ <i>neorufescens</i> ” 1	P2072, P2061	/	/	0.4	0.33	/	0.97
“ <i>neorufescens</i> ” 1+3	P2072, P2061, P2184	/	/	/	0.35	/	/
“ <i>neorufescens</i> ” 3	P2184	/	/	0.51	0.33	/	1
“ <i>neorufescens</i> ” 4	P2229	/	/	0.75	0.36	/	1
“ <i>neorufescens</i> ” 5	P2086	0.3	/	/	0.41	/	1
<i>lepidophora</i> 2	P2101	0.91	0.58	0.91	0.97	0.72	1
<i>lepidophora</i> 1a	P2124, P1844	/	/	/	/	/	0.95
<i>lepidophora</i> 1b	P2112	/	/	/	/	/	0.98
<i>lepidophora</i> 1	P2124, P1844, P2112	0.92	0.51	0.52	0.66	0.69	/
<i>rufescens</i> 2	P2071	0.46	0.44	/	0.88	/	1
<i>rufescens</i> 1	P2043, P2002, P2203, P2083	0.41	0.36	0.54	0.88	0.37	0.96
<i>friesiorum</i>	P2045, P1647, P2006, P2007, P2035, P1739, P1648	0.6	0.57	0.43	0.85	0.29	/
<i>friesiorum</i> a	P2045, P1647, P2006, P2007, P2035, P1739	/	/	0.44	/	/	0.71
<i>spuriella</i>	P1648	/	/	0.44	/	/	0.97
<i>fimbriata</i>	FJ527272, FJ527273, FJ527274	0.87	NA	NA	NA	NA	NA
Clade 7/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
<i>cinnamomea</i>	P2141, HOB21, HOB22, HOB23	0.68	0.5	0.71	0.63	0.54	0.72
<i>erioderma</i>	P2162, P2163	/	0.87	/	/	1	/
<i>erioderma</i> 1	P2162	0.74	/	0.91	0.91	/	/
<i>erioderma</i> 2	P2163	0.62	/	0.91	0.93	/	/
<i>montis-wilhelmii</i>	P2156, P2157	0.37	0.87	/	0.94	NA	0.98
<i>montis-wilhelmii</i> 1	P2156	0.43	/	0.81	/	/	/
<i>montis-wilhelmii</i> 2	P2157	0.43	/	0.81	/	/	/
“ <i>neocanina</i> ” 1	P0070, P2192, P2212, P2098, HOB26, HOB27	0.44	/	0.36	/	/	0.93
“ <i>neocanina</i> ” 2	P0068, P2202, P2089	0.28	/	0.45	0.25	0.38	0.86
“ <i>neocanina</i> ” 3	P2224, P1405	0.34	0.33	0.49	0.25	0.29	0.97

Table S2. Continued.

	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
“neocanina” 3a	P2224	/	/	/	0.41	/	/
“neocanina” 3b	P1405	/	/	/	0.41	/	/
“neocanina” 4	P2232, P0006	0.56	0.73	0.52	0.53	0.54	0.97
“neocanina” 1b	P2098	/	0.38	/	/	/	/
Clade 8/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
<i>degenii</i> 1	P2108, P2129, P2133, P2170, P2130, P0523, P0586, P0563	0.7	0.82	0.56	0.77	0.83	0.97
<i>degenii</i> 2ab	HOB3, P47, P2139, P2107, P2182, P2183, P3086, P2228	0.43	/	/	/	0.69	0.84
<i>degenii</i> 2a		0.27	0.52	/	/	/	/
<i>degenii</i> 2b	P2228	0.34	NA	0.46	0.31	/	/
<i>tereziana</i>	P0433, P2171, P2172, P2174, P2175, P2021	0.58	0.71	0.44	/	/	0.84
<i>degenii</i> 3a-c		/	0.47	/	/	/	/
<i>degenii</i> 3b	P1267, P2022, P1276	/	/	0.49	0.41	0.79	0.96
<i>degenii</i> 3c	ES3306, P2023	0.33	/	0.49	0.36	0.73	0.98
<i>degenii</i> 3a	P2136, P2137	0.43	/	0.49	0.67	0.77	0.97
<i>membranacea</i> 1	P1005, P2116, P0003, P0086, P2121, P2122, P2191, HOB4, HOB5, HOB6, P2128, P2131	/	/	0.34	/	0.35	0.62
<i>membranacea</i> 2	P2135	0.72	0.35	0.67	/	0.81	0.65
<i>membranacea</i> 1–2		/	/	/	0.51	/	/
Clade 9/ <i>Peltigera</i>	Specimen	ITS	$\beta$ -tubulin	COR1b	COR3	COR16	bPTP
sp. 18	P2094, P1413	0.72	0.76	0.8	0.61	0.41	0.83
<i>evansiana</i>	P1817, P1818, P2084, P2189	0.48	0.46	0.81	0.63	0.67	0.69
sp. 19	P0078, P2030, P1230	0.47	/	/	0.37	/	0.81
<i>austroamericana</i> 1	P0408, P0027	/	/	/	/	/	0.84
<i>austroamericana</i> 2	P2059, P2138	/	/	/	/	/	0.79
<i>austroamericana</i> 6	P2055	0.31	/	0.46	0.4	0.26	1
sp. 22	P0926, P2077, P2054, P2074	/	/	0.22	0.38	/	0.55
sp. 21	P2218	/	/	/	0.39	0.58	1
<i>canina</i> 1		/	/	0.57	0.28	/	0.34
<i>canina</i> 2		/	/	0.48	/	0.44	0.13
<i>austroamericana</i> 3	P2076, P2197, P2048, P2073	/	/	/	/	0.56	0.59
“ <i>fuscopraetextata</i> ”		0.67	0.42	/	/	0.51	/
sp. 20		0.12	/	/	/	/	0.4
<i>islandica</i>		/	/	/	/	/	0.78
<i>austroamericana</i> 4	P0025, P0038, P0032, P0054	/	/	/	/	/	0.59
<i>praetextata</i>		0.7	/	0.42	/	0.5	/
sp. 21 + sp. 22		0.26	/	/	/	/	/
<i>canina</i> 1 + <i>canina</i> 2		0.24	/	/	/	/	/
<i>austroamericana</i> s.l.		/	0.25	/	/	/	/
<i>islandica</i> + sp. 20		/	/	/	0.36	0.46	/

**Table S3.** Changes in parameters, likelihood and species support values as a function of the  $\theta$  prior in bPP analyses. Values in bold (from left to right) represent the  $\theta$  prior value selected for the final analyses, the lowest differences between Prior and Posterior  $\theta$ , the best likelihood, and cases where the analyses suggest merging the species, respectively. NA = not applicable.

Clade	Prior $\theta$		Prior $\theta$ –	(Prior $\theta$ –	lnL	<i>ulcerata</i> 1a	<i>ulcerata</i> 2a	<i>ulcerata</i> 1	<i>didactyla</i> 2	<i>extenuata</i> 1	<i>didactyla</i> 1
	Prior $\theta$	Posterior $\theta$	Posterior $\theta$	Posterior $\theta$ )/		vs.	vs.	vs.	vs.	vs.	vs. <i>didactyla</i> 2-
4				Posterior $\theta$		<i>ulcerata</i> 1b	<i>ulcerata</i> 2b	<i>ulcerata</i> 2	<i>sorediifera</i>	<i>extenuata</i> 2	<i>sorediifera</i>
4P	0.010	0.015417333	0.005417333	0.351379386	-9,515	0.91	<b>0.43</b>	0.98	0.99	1.00	1.00
4P	0.015	0.015177333	0.000177333	0.011684069	-9,529	0.63	<b>0.31</b>	0.96	0.89	1.00	1.00
4P	<b>0.020</b>	0.019839294	<b>-0.000160706</b>	-0.008100383	-9,523	<b>0.36</b>	<b>0.22</b>	0.82	0.76	1.00	1.00
4P	0.032	0.031066667	-0.000933333	-0.030042907	-9,515	<b>0.09</b>	<b>0.08</b>	<b>0.42</b>	0.62	0.99	0.98
4P	0.050	NA	NA	NA	-9,509	<b>0.03</b>	<b>0.03</b>	<b>0.21</b>	<b>0.42</b>	0.90	0.87
4P	0.070	NA	NA	NA	-9,507	<b>0.02</b>	<b>0.02</b>	<b>0.22</b>	<b>0.24</b>	0.75	0.54
4P	0.100	NA	NA	NA	<b>-9,504</b>	<b>0.01</b>	<b>0.01</b>	<b>0.14</b>	<b>0.18</b>	0.66	<b>0.47</b>
Clade	Prior $\theta$		Prior $\theta$ –	(Prior $\theta$ –	lnL	<i>ponojensis/monticola</i> 1a vs. <i>ponojensis/monticola</i> 1b	<i>antarctica</i> vs. <i>antarctica</i> 2	<i>ponojensis/monticola</i> 4a vs. <i>ponojensis/monticola</i> 4b	sp. 17a vs. sp. 17b	<i>ponojensis/monticola</i> 5a vs. <i>ponojensis/monticola</i> 5b	<i>ponojensis/monticola</i> 10a vs. <i>ponojensis/monticola</i> 10b
	Prior $\theta$	Posterior $\theta$	Posterior $\theta$	Posterior $\theta$ )/							
5				Posterior $\theta$							
5P	0.0010	0.002127600	0.001127600	0.529986840	-7,954	1.00	<b>0.30</b>	<b>0.25</b>	<b>0.34</b>	0.97	0.99
5P	0.0020	0.002711400	0.000711400	0.262373681	-7,949	1.00	<b>0.34</b>	<b>0.14</b>	<b>0.47</b>	0.93	0.99
5P	0.0032	0.003438000	0.000238000	0.069226294	-7,945	1.00	<b>0.32</b>	<b>0.13</b>	<b>0.48</b>	0.82	0.98
5P	<b>0.0038</b>	0.003818240	<b>1.824E-05</b>	0.004777070	-7,945	1.00	<b>0.31</b>	<b>0.13</b>	<b>0.43</b>	0.76	0.97
5P	0.0050	0.004586960	-0.000413040	-0.090046567	-7,943	1.00	<b>0.29</b>	<b>0.09</b>	<b>0.35</b>	0.61	0.97
5P	0.0080	0.006696458	-0.001303542	-0.194661417	<b>-7,942</b>	0.99	<b>0.20</b>	<b>0.10</b>	<b>0.24</b>	<b>0.35</b>	0.91
5P	0.0120	0.009722958	-0.002277042	-0.234192311	-7,943	0.99	<b>0.14</b>	<b>0.10</b>	<b>0.19</b>	<b>0.22</b>	0.78
5P	0.0180	0.014717833	-0.003282167	-0.223006104	-7,946	0.96	<b>0.11</b>	<b>0.07</b>	<b>0.13</b>	<b>0.17</b>	0.53
5P	0.0250	0.020871696	-0.004128304	-0.197794392	-7,949	0.83	<b>0.10</b>	<b>0.05</b>	<b>0.12</b>	<b>0.17</b>	<b>0.40</b>
5P	0.0320	0.027336565	-0.004663435	-0.170593306	-7,951	0.74	<b>0.11</b>	<b>0.07</b>	<b>0.11</b>	<b>0.15</b>	<b>0.32</b>
Clade	Prior $\theta$		Prior $\theta$ –	(Prior $\theta$ –	lnL	<i>“neorufescens”</i> 1 vs. <i>“neorufescens”</i> 2	<i>“neorufescens”</i> 1–2 vs. <i>“neorufescens”</i> 3	<i>rufescens</i> 1 vs. <i>rufescens</i> 2	<i>papuana</i> vs. <i>granulosa</i>	<i>soredians</i> vs. <i>laciniata</i> 2	
	Prior $\theta$	Posterior $\theta$	Posterior $\theta$	Posterior $\theta$ )/							
6				Posterior $\theta$							
6P	0.0010	0.002013786	0.001013786	0.503422906	-12,512	1.00	1.00	1.00	1.00	1.00	
6P	0.0020	0.002694610	0.000694610	0.257777563	-12,505	1.00	1.00	1.00	1.00	1.00	
6P	0.0032	0.003470750	0.000270750	0.078009076	-12,500	1.00	1.00	1.00	1.00	1.00	
6P	<b>0.004</b>	0.004009000	<b>9E-06</b>	0.002244949	-12,497	1.00	1.00	1.00	0.99	1.00	
6P	0.005	0.004697643	-0.000302357	-0.064363587	-12,495	1.00	1.00	1.00	0.99	1.00	
6P	0.008	0.006923250	-0.001076750	-0.155526667	-12,492	1.00	1.00	1.00	0.94	1.00	
6P	0.012	0.010139679	-0.001860321	-0.183469418	-12,489	0.99	1.00	1.00	0.87	1.00	

Table S3. Continued.

Clade <i>cont.</i>	Prior $\theta$	Posterior $\theta$	Prior $\theta$	(Prior $\theta$ –	lnL	“ <i>neurufescens</i> ” 1	“ <i>neurufescens</i> ” 1–2	<i>rufescens</i> 1	<i>papua</i>	<i>soredians</i>
			–	Posterior $\theta$ )/		vs.	vs.	vs.	vs.	vs.
			Posterior $\theta$	Posterior $\theta$		“ <i>neurufescens</i> ” 2	“ <i>neurufescens</i> ” 3	<i>rufescens</i> 2	<i>granulosa</i>	<i>laciniata</i> 2
6P	0.018	0.015329357	-0.002670643	-0.174217538	-12,488	0.94	1.00	1.00	0.77	1.00
6P	0.025	0.021705643	-0.003294357	-0.151774226	-12,486	0.79	0.99	0.98	0.71	0.98
6P	0.032	0.028303357	-0.003696643	-0.130607935	-12,485	0.61	0.91	0.94	0.66	0.96
6P	0.050	NA	NA	NA	-12,483	<b>0.35</b>	0.73	0.77	0.62	0.80
6P	0.070	NA	NA	NA	-12,481	<b>0.17</b>	<b>0.44</b>	0.65	0.60	0.76
6P	0.100	NA	NA	NA	<b>-12,480</b>	<b>0.12</b>	<b>0.3</b>	0.53	0.58	0.52
Clade 7	Prior $\theta$	Posterior $\theta$	Prior $\theta$	(Prior $\theta$ –	lnL	<i>montis-wilhelmii</i> 1	<i>erioderma</i> 1	<i>neocanina</i> 1a	<i>neocanina</i> 1	
			–	Posterior $\theta$ )/		vs.	vs.	vs.	vs.	
			Posterior $\theta$	Posterior $\theta$		<i>montis-wilhelmii</i> 2	<i>erioderma</i> 2	<i>neocanina</i> 1b	<i>neocanina</i> 2	
7P	0.001	0.001941714	0.000941714	0.484991171	-7,892	0.97	1.00	0.73	1.00	
7P	0.0020	0.002527000	0.000527000	0.208547685	-7,889	0.90	1.00	0.64	1.00	
7P	<b>0.0032</b>	0.003283080	<b>8.308E-05</b>	0.025305506	<b>-7,886</b>	0.82	1.00	<b>0.47</b>	1.00	
7P	0.0050	0.004385077	-0.000614923	-0.140230833	<b>-7,886</b>	0.70	1.00	<b>0.29</b>	1.00	
7P	0.0120	0.009614692	-0.002385308	-0.248089862	-7,890	<b>0.45</b>	0.97	<b>0.11</b>	1.00	
7P	0.0180	0.014464500	-0.003535500	-0.244426009	-7,892	<b>0.37</b>	0.9	<b>0.07</b>	0.99	
7P	0.0250	0.021123846	-0.003876154	-0.183496595	-7,894	<b>0.34</b>	0.81	<b>0.06</b>	0.88	
7P	0.0320	0.027759538	-0.004240462	-0.152756937	-7,895	<b>0.33</b>	0.74	<b>0.05</b>	0.67	
Clade 8	Prior $\theta$	Posterior $\theta$	Prior $\theta$	(Prior $\theta$ –	lnL	<i>membranacea</i> 1	<i>degenii</i> 3b	<i>degenii</i> 3a	<i>degenii</i> 2a	
			–	Posterior $\theta$ )/		vs.	vs.	vs.	vs.	
			Posterior $\theta$	Posterior $\theta$		<i>membranacea</i> 2	<i>degenii</i> 3c	<i>degenii</i> 3b–3c	<i>degenii</i> 2b	
8P	0.001	0.001615000	0.000615000	0.380804954	-8,956	1.00	1.00	1.00	1.00	
8P	0.002	0.002164330	0.000164330	0.075926499	<b>-8,954</b>	1.00	1.00	1.00	1.00	
8P	<b>0.0025</b>	0.002428467	<b>-7.15333E-05</b>	-0.029456173	<b>-8,954</b>	1.00	1.00	1.00	1.00	
8P	0.0032	0.002816270	-0.000383730	-0.136254691	<b>-8,954</b>	1.00	1.00	1.00	1.00	
8P	0.005	0.003830730	-0.001169270	-0.305234250	<b>-8,954</b>	1.00	1.00	1.00	1.00	
8P	0.008	0.005600000	-0.002400000	-0.428571429	-8,957	1.00	1.00	1.00	0.99	
8P	0.012	0.008423267	-0.003576733	-0.424625442	-8,961	1.00	1.00	1.00	0.96	
8P	0.018	0.012934733	-0.005065267	-0.391601940	-8,967	1.00	0.97	1.00	0.65	
8P	0.025	0.018435385	-0.006564615	-0.356087791	-8,973	1.00	0.88	0.99	<b>0.23</b>	
8P	0.032	0.024410786	-0.007589214	-0.310895929	-8,978	0.94	0.74	0.97	<b>0.13</b>	

Table S3. Continued.

Clade			Prior $\theta$	(Prior $\theta$ – Posterior $\theta$ )/ Posterior $\theta$	$\ln L$	<i>islandica</i> vs. sp. 20	<i>austroamericana</i> 1 vs. <i>austroamericana</i> 2	<i>austroamericana</i> 3 vs. <i>austroamericana</i> 4
9	Prior $\theta$	Posterior $\theta$	Posterior $\theta$					
9P	0.0010	0.002395677	0.001395677	0.582581458	-10,571	1.00	1.00	1.00
9P	0.0020	0.002922161	0.000922161	0.315575015	-10,563	1.00	1.00	1.00
9P	0.0032	0.003594581	0.000394581	0.109771069	-10,556	1.00	1.00	1.00
9P	<b>0.0044</b>	0.004295097	<b>-0.000104903</b>	-0.024423895	-10,550	1.00	1.00	1.00
9P	0.0050	0.004655419	-0.000344581	-0.074017183	-10,549	1.00	0.99	1.00
9P	0.0080	0.006599613	-0.001400387	-0.212192291	-10,543	1.00	0.97	1.00
9P	0.0120	0.009470935	-0.002529065	-0.267034353	<b>-10,542</b>	0.93	0.90	0.98
9P	0.0180	0.014211613	-0.003788387	-0.266569812	-10,545	0.58	0.82	0.63
9P	0.0250	0.018687000	-0.006313000	-0.337828437	-10,546	<b>0.26</b>	0.79	<b>0.32</b>
9P	0.0320	0.024148034	-0.007851966	-0.325159638	-10,552	<b>0.17</b>	0.74	<b>0.24</b>



**Table S4.** Identical *rbcLX* sequences collapsed prior to the RAxML analysis (Fig. 3). Names in square brackets might be misidentifications.

Sequence no.	No. of seq.	<i>Peltigera</i> species/other genera	Locality	DNA/G.B. no.
Seq1	6	<i>malacea</i>	Canada: BC	KC437690, KC437691, KC437902, KC437903, KC437904, KC437906
Seq2	8	" <i>fuscopraetextata</i> "	Argentina	P2012, P2016, P2018
		" <i>fuscopraetextata</i> "	Chile	P2014, P2017
		<i>frigida</i>	Chile	P2041
		<i>ulcerata</i> 1	Costa Rica	P0077
		sp. 22	Colombia	P0926
Seq3	5	<i>rufescens</i>	Germany	DQ185275
		<i>leucophebia</i>	Canada: BC	KC437826
		<i>neopolydactyla</i> s.l.	Canada: BC	KC437876
		<i>leucophebia</i> , <i>venosa</i> , <i>britannica</i>	Canada: BC	KC437676
		<i>canina</i> , <i>aphthosa</i> , <i>ponojensis</i> , <i>kristinssonii</i> , " <i>fuscopraetextata</i> ", <i>praetextata</i> , sp.	Canada: BC	KC437789
Seq4	5	<i>degenii</i> 3a	Russia	P2136
		<i>degenii</i> 1	Ukraine	P2170
		<i>membranacea</i>	Finland	EF102334
		<i>membranacea</i>	Canada: BC	KC437874
		[ <i>neopolydactyla</i> s.l.] <i>degenii</i> ?	Finland	EF102337
Seq5	5	<i>scabrosa</i> 1	Canada: QC	KX922997, KX922999, KX923000
		<i>scabrosa</i> 4	Norway	KX923020
		<i>occidentalis</i>	Norway	KX922969
Seq6	8	<i>neopolydactyla</i> s.l.	Canada: BC	KC437910
		<i>neopolydactyla</i> 1	Canada: QC	KX922922
		<i>scabrosa</i> 4	Canada: QC	KX923018
		<i>scabrosa</i> 4	Norway	KX923019
		<i>scabrosa</i> 1	Canada: AB	KX922995
		<i>scabrosa</i> 1	Canada: QC	KX922998
		<i>occidentalis</i>	U.S.A.: AK	KX922970
		<i>occidentalis</i>	Canada: QC	KX922966
Seq7	8	<i>membranacea</i>	U.S.A.: AK	DQ185284
		<i>aphthosa</i>	Switzerland	DQ185311
		<i>leucophebia</i>	Finland	EF102327, EF102328
		<i>praetextata</i>	Finland	EF102331, EF102331
		<i>canina</i> 1	Canada: BC	HOB12
		<i>Nostoc</i> sp.	unknown	AB075918
Seq8	5	<i>praetextata</i>	Finland	EF102345
		<i>polydactylon</i>	Norway	KX922977
		<i>polydactylon</i>	U.S.A.: AK	KX922978
		<i>polydactylon</i>	Norway	KX922983, KX922984
Seq9	6	<i>praetextata</i>	Norway	P0570, P0842
		<i>ponojensis/monticola</i> 7	Norway	P0075
		" <i>neocanina</i> " 4	Iceland	P0006
		<i>cinnanomea</i>	Canada: BC	P1808, KC437699

Table S4. Continued.

Sequence no.	No. of seq.	<i>Peltigera</i> species/other genera	Locality	DNA/G.B. no.
		<i>canina</i> , <i>leucophlebia</i> , “ <i>fuscopraetextata</i> ”, <i>polydactylon</i> , spp.	Canada: BC	KC437699
Seq10	6	<i>neopolydactyla</i> 2	Norway	KX922940, KX922938, KX922942, KX922941
		<i>degenii</i> 1	Norway	P0586
		<i>membranacea</i> 1	Norway	P1005
Seq11	10	“ <i>neocanina</i> ” 1	U.S.A.: CO	P2089
		<i>ponojensis/monticola</i> 10b	U.S.A.: UT	P2114
		<i>lepidophora</i> 1	Iceland	P2124
		<i>ponojensis/monticola</i> 8	U.S.A.: UT	P2210, P2207
		<i>didactyla</i> 3	Canada: BC	P2110
		“ <i>neocanina</i> ” 1	Canada: BC	HOB27
		<i>lepidophora</i> 1	unknown	P1844
		“ <i>fuscopraetextata</i> ”	U.S.A.: UT	P2223
		<i>leucophlebia</i> , “ <i>neocanina</i> ”, <i>neckeri</i> , <i>britannica</i> , spp.	Canada: BC	KC437817
Sea12	9	<i>austroamericana</i> 4	Costa Rica	P0032
		<i>soredians</i>	Costa Rica	P2068
		<i>soredians</i>	Ecuador	P2151
		<i>laciniata</i> 2	Bolivia	P2051
		<i>laciniata</i> 1	Ecuador	P2198, P2058
		<i>laciniata</i> 1	Colombia	P2075
		<i>laciniata</i> 1	Bolivia	P2050
		sp. 15	Colombia	P2153
Seq13	6	<i>membranacea</i> 1	Corsica	P2122
		<i>membranacea</i> 1	Portugal	P2121
		<i>melanorrhiza</i>	Azores	KX922914
		<i>hymenina</i>	Azores	KX922902, KX922903, KX922910
Seq 14	11	<i>neopolydactyla</i> 2b	China	KX922931, KX922933, KX922935, KX922936, KX922932, KX922934, KX922944
		<i>neopolydactyla</i> s.l	unknown	KC437914
		<i>scabrosa</i> 3	Russia	KX923014, KX923015
		sp. 5	PNG	KX923045
Seq15	18	<i>austroamericana</i>	Peru	P1474
		<i>austroamericana</i> 1	Costa Rica	P0027
		<i>austroamericana</i> 3	Peru	P2048
		<i>austroamericana</i> 3	Ecuador	P2197
		<i>austroamericana</i> 4	Mexico	P2060
		<i>austroamericana</i> 4	Costa Rica	P0038
		<i>austroamericana</i> 5	Ecuador	P2019
		<i>austroamericana</i> 5	Bolivia	P2052
		<i>frigida</i>	Chile	P0082
		sp. 17	Ecuador	P2195
		<i>ulcerata</i> 1	Costa Rica	P0033, P0041
		<i>continentalis</i>	Russia	P1810, P2099

Table S4. Continued.

Sequence no.	No. of seq.	<i>Peltigera</i> species/other genera	Locality	DNA/G.B. no.
		sp. 22	Colombia	P1841, P2077
		sp. 22	Peru	P2074
		“ <i>neocanina</i> ” 1	U.S.A.: AK	P2098
Seq 16	20	<i>scabrosa</i> 2	Norway	KX923011
		<i>neopolydactyla</i> 4	Norway	KX922954
		<i>scabrosella</i>	Greenland	KX923024
		<i>scabrosella</i>	Norway	KX923023
		<i>scabrosa</i> 2	Norway	KX923010
		<i>scabrosa</i> 2	Norway	KX923009
		<i>scabrosella</i>	Norway	KX923022
		<i>neopolydactyla</i> 4	Norway	KX922953
		<i>scabrosa</i> 2	Canada:QC	KX923003
		<i>scabrosa</i> 2	Norway	KX923005
		<i>neopolydactyla</i> 4	Norway	KX922952
		<i>scabrosa</i> 2	Canada:BC	KX923006
		<i>scabrosella</i>	Norway	KX923021
		<i>scabrosa</i> 2	Canada:QC	KX923008
		<i>scabrosa</i> 2	Russia	KX923007
		sp. 7b	Japan	KX923054
		sp. 7b	Japan	KX923055
		sp. 7b	Japan	KX923056
		<i>Nephroma arcticum</i>	Canada:BC	KC437907
		<i>neopolydactyla</i>	Canada:BC	KC437908
Seq17	11	<i>N. bellum</i>	Austria	DQ185293
		<i>N. bellum</i>	unknown	KC437843, EF102308, EF102309, EF102310
		<i>N. bellum</i>	Finland	EF102306
		<i>N. resupinatum</i>	unknown	EF102318, EF102319
		<i>Lobaria pulmonaria</i>	unknown	EF102297
		<i>Parmeliella triptophylla</i>	unknown	EF102324, EF102325
Seq18	6	<i>N. parile</i>	Finland	EF102314, EF102316, EF102317
		<i>N. parile</i>	Canada: BC	KC437844
		<i>L. pulmonaria</i>	Finland	EF102302, EF102298

**Table S5.** Specificity index for *Peltigera* species with at least three *rbcLX* sequences for their *Nostoc* cyanobionts in our dataset. The raw score calculation is based on all sequences available. The corrected score 1 (correction for the non-supported phylogroups) is based on the assumption that sequences from phylogroups XXX and XXXIX (Fig. 3) represent different groups unless the sequences are identical or form a highly-supported subclade within these phylogroups. The corrected score 2 (correction for the sample/locality) is based on a single sequence per phylogroup for each locality.

<i>Peltigera</i> species	Clade (Fig. 1)	No. of seq.	Raw score	Corrected score 1	Corrected score 2
<i>retifoveata</i>	1	4	1.00	1.00	1.00
<i>aubertii</i>	2	5	0.44	0.44	0.44
<i>frigida</i>	2	5	0.44	0.44	0.44
sp. 14	2	3	1.00	1.00	1.00
<i>patagonica</i>	2	4	1.00	1.00	1.00
<i>continentalis</i>	3	3	0.54	0.33	0.50
<i>ulcerata</i> 1	4	7	0.55	0.21	0.38
<i>extenuata</i> 1	4	6	0.72	0.72	0.72
<i>vainioi</i>	4	3	1.00	1.00	1.00
<i>ponojensis/monticola</i> 1a	5	7	0.23	0.18	0.23
<i>antarctica</i>	5	5	0.28	0.20	0.28
<i>ponojensis/monticola</i> 10a	5	3	0.33	0.50	0.33
<i>ponojensis/monticola</i> 9	5	5	0.44	0.44	0.44
sp. 17	5	9	0.49	0.49	0.25
<i>ponojensis/monticola</i> 6	5	3	0.54	0.54	0.50
<i>ponojensis/monticola</i> 8	5	8	0.59	0.25	0.44
<i>ponojensis/monticola</i> 4	5	4	0.63	0.63	0.63
<i>rufescens</i> 1	6	5	0.28	0.28	0.28
<i>friesiorum</i>	6	16	0.36	0.29	0.22
<i>soredians</i>	6	4	0.50	0.50	0.54
<i>wulingensis</i>	6	3	0.54	0.54	0.54
<i>lepidophora</i> 1	6	3	0.54	0.54	0.54
<i>laciniata</i> 1	6	8	0.78	0.78	0.72
“ <i>neocanina</i> ” 1	7	8	0.31	0.22	0.31
“ <i>neocanina</i> ” 2	7	3	0.54	0.33	0.54
“ <i>neocanina</i> ” 3	7	5	0.68	0.68	0.50
<i>degenii</i> 1	8	6	0.21	0.21	0.21
<i>degenii</i> 2a	8	6	0.46	0.46	0.46
<i>membranacea</i> 1	8	7	0.59	0.59	0.59
<i>degenii</i> 3b	8	3	1.00	1.00	1.00
<i>tereziana</i>	8	5	1.00	1.00	1.00
<i>canina</i> 2	9	15	0.24	0.15	0.14
<i>canina</i> 1	9	14	0.25	0.25	0.22
<i>praetextata</i>	9	13	0.37	0.37	0.35
<i>austroamericana</i> 3	9	4	0.50	0.50	0.50
<i>austroamericana</i> 5	9	7	0.51	0.43	0.51
<i>austroamericana</i> 4	9	5	0.52	0.36	0.63
<i>evansiana</i>	9	4	0.63	0.63	0.56
sp. 22	9	5	0.68	0.44	0.68
“ <i>fuscopraetextata</i> ”	9	10	0.82	0.82	0.82
sp. 19	9	3	1.00	1.00	1.00

**Table S6.** Species, geographic origin, reference paper and ITS GenBank accession number of specimens that were only used to assess the variation of the ITS1-HR region.

Species	Geographic origin and reference	ITS GenBank No.
<i>P. retifoveata</i>	Canada, Miadlikowska & al., 2003	AY257888
<i>P. retifoveata</i>	Canada, Miadlikowska & al., 2003	AY257889
<i>P. sp. 14</i>	Schmull & al., 2011	HQ650648
<i>P. frigida</i>	Miadlikowska & al., 2003	AY257894
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708935
<i>P. krisinssonii</i>	Canada, Miadlikowska & al., 2003	AY257891
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708936
<i>P. krisinssonii</i>	Canada, Miadlikowska & al., 2003	AY257892
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708938
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708953
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708939
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708940
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708941
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	KC437637
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708942
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708943
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708945
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708946
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708947
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708948
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708949
<i>P. krisinssonii</i>	Canada, BC, O'Brien & al., 2013	FJ708950
<i>P. continentalis</i>	Mongolia, Miadlikowska & al., 2003	AY257890
<i>P. castanea</i>	Canada, Goffinet & al., 2003	AY266019
<i>P. castanea</i>	Canada, Goffinet & al., 2003	AY266021
<i>P. castanea</i>	Canada, Goffinet & al., 2003	AY266023
<i>P. castanea</i>	Canada, Goffinet & al., 2003	AY266025
<i>P. didactyla</i> 1	Canada, Goffinet & al., 2003	AY266044
<i>P. didactyla</i> 2	New Zealand, Thomas & al., 2002	AF350295
<i>P. didactyla</i> 2	Poland, Miadlikowska & al., 2003	AY257930
<i>P. didactyla</i> 3	Brazil, Miadlikowska & al., 2003	AY257931
<i>P. didactyla</i> 3	Canada, BC, Goffinet & al., 2003	AY266027
<i>P. didactyla</i> 3	Canada, BC, Goffinet & al., 2003	AY266029
<i>P. didactyla</i> 3	Papua New Guinea, Sérusiaux & al., 2009	FJ527258
<i>P. didactyla</i> 3	Poland, Miadlikowska & al., 2003	AY257929
<i>P. extenuata</i> 1	Canada, Miadlikowska & al., 2003	AY257940
<i>P. extenuata</i> 1	Canada, Miadlikowska & al., 2003	AY257942
<i>P. extenuata</i> 1	Canada, Goffinet & al., 2003	AY266031
<i>P. extenuata</i> 1	Canada, Goffinet & al., 2003	AY266033
<i>P. extenuata</i> 1	Canada, Goffinet & al., 2003	AY266035
<i>P. extenuata</i> 1	Poland, Miadlikowska & al., 2003	AY257937
<i>P. extenuata</i> 1	Poland, Miadlikowska & al., 2003	AY257938
<i>P. extenuata</i> 1	Poland, Miadlikowska & al., 2003	AY257939

Table S6. Continued.

Species	Geographic origin and reference	ITS GenBank No.
<i>P. extenuata</i> 2	Mexico, Goffinet & al., 2003	AY266042
<i>P. sorediifera</i>	Australia, Miadlikowska & al., 2003	AY257933
<i>P. sorediifera</i>	Rwanda, Miadlikowska & al., 2003	AY257935
<i>P. sorediifera</i>	Rwanda, Goffinet & al., 2003	AY266037
<i>P. sorediifera</i>	Democratic Republic of Congo, Miadlikowska & al., 2003	AY257934
<i>P. sorediifera</i>	Democratic Republic of Congo, Miadlikowska & al., 2003	AY257935
<i>P. ulcerata</i> 1	Rwanda, Goffinet & al., 2003	AY266040
<i>P. ulcerata</i> 2	Brazil, Miadlikowska & al., 2003	AY257957
<i>P. ulcerata</i> 2	Papua New Guinea, Sérusiaux & al., 2009	FJ527259
<i>P. ponojensis/monticola</i> 6	Poland, Miadlikowska & al., 2003	AY257872
<i>P. ponojensis/monticola</i> 6	Poland, Miadlikowska & al., 2003	AY257874
<i>P. ponojensis/monticola</i> 9	Switzerland, Miadlikowska & al., 2003	AY257877
<i>P. ponojensis/monticola</i> 9	Switzerland, Miadlikowska & al., 2003	AY257881
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527254
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527256
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527245
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527247
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527248
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527249
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527250
<i>P. granulosa</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527251
<i>P. laciniata</i> 1	Ecuador, Miadlikowska & al., 2003	AY257922
<i>P. laciniata</i> 1	Ecuador, Miadlikowska & al., 2003	AY257923
<i>P. lepidophora</i> 1	Canada, Miadlikowska & al., 2003	AY257920
<i>P. lepidophora</i> 1	Canada, Miadlikowska & al., 2003	AY257921
<i>P. "neorufescens"</i> 5	Canada, Miadlikowska & al., 2003	AY257916
<i>P. rufescens</i> 1	Canada, Miadlikowska & al., 2003	AY257917
<i>P. rufescens</i> 1	Canada, Miadlikowska & al., 2003	AY257918
<i>P. rufescens</i> 1	Canada, Miadlikowska & al., 2003	AY257925
<i>P. rufescens</i> 1	Canada, Miadlikowska & al., 2003	AY257927
<i>P. wulingensis</i>	China, Han & al., 2013	JX094144
<i>P. wulingensis</i>	China, Han & al., 2013	JX094145
<i>P. wulingensis</i>	China, Han & al., 2013	JX094146
<i>P. wulingensis</i>	China, Han & al., 2013	JX094147
<i>P. wulingensis</i>	China, Han & al., 2013	JX094148
<i>P. wulingensis</i>	China, Han & al., 2013	JX094149
<i>P. wulingensis</i>	China, Han & al., 2013	JX094150
<i>P. cinnamomea</i>	Canada, BC, O'Brien & al., 2013	FJ708914
<i>P. cinnamomea</i>	Canada, BC, O'Brien & al., 2013	FJ708915
<i>P. cinnamomea</i>	Canada, Miadlikowska & al., 2003	AY257898
<i>P. cinnamomea</i>	Canada, Miadlikowska & al., 2003	AY257898
<i>P. cinnamomea</i>	Canada, Miadlikowska & al., 2003	AY257913
<i>P. erioderma</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527264
<i>P. montis-wilhelmii</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527261

Table S6. Continued.

Species	Geographic origin and reference	ITS GenBank No.
<i>P. "neocanina"</i> 1	Canada, Miadlikowska & al., 2003	AY257897
<i>P. "neocanina"</i> 1	Canada, BC, O'Brien & al., 2013	KC437636
<i>P. "neocanina"</i> 1	Canada, BC, O'Brien & al., 2013	FJ708918
<i>P. "neocanina"</i> 1	Canada, BC, O'Brien & al., 2013	FJ708919
<i>P. "neocanina"</i> 1	Canada, BC, O'Brien & al., 2013	FJ708920
<i>P. "neocanina"</i> 1	Canada, BC, O'Brien & al., 2013	FJ708921
<i>P. "neocanina"</i> 2	Canada, Miadlikowska & al., 2003	AY257955
<i>P. degenii</i> 1	Finland, Miadlikowska & al., 2003	AY257903
<i>P. degenii</i> 1	Finland, Fedrowitz & al., 2011	HM448800
<i>P. degenii</i> 1	Finland, Fedrowitz & al., 2011	HM448801
<i>P. degenii</i> 1	Poland, Miadlikowska & al., 2003	AY257901
<i>P. degenii</i> 2a	Canada, Miadlikowska & al., 2003	AY257887
<i>P. degenii</i> 2a	Canada, Miadlikowska & al., 2003	AY257902
<i>P. degenii</i> 2a	Canada, Miadlikowska & al., 2003	AY257904
<i>P. degenii</i> 3a	James & al., 2006	DQ782841
<i>P. degenii</i> 3c	South Korea, Wei & al., 2009	GQ292456
<i>P. degenii</i> 3c	South Korea, Wei & al., 2009	GQ292458
<i>P. membranacea</i> 1	Canada, BC, O'Brien & al., 2013	FJ709032
<i>P. membranacea</i> 1	Canada, BC, O'Brien & al., 2013	FJ709033
<i>P. membranacea</i> 1	Canada, Miadlikowska & al., 2003	AY257906
<i>P. membranacea</i> 1	Xavier & al., 2012	JX181776
<i>P. membranacea</i> 1	Poland, Miadlikowska & al., 2003	AY257907
<i>P. membranacea</i> 1	Canada, BC, O'Brien & al., 2013	KC437646
<i>P. membranacea</i> 2	Russia, Miadlikowska & al., 2003	AY257908
<i>P. tereziana</i>	Australia, Sérusiaux & al., 2009	FJ527266
<i>P. tereziana</i>	Australia, Sérusiaux & al., 2009	FJ527267
<i>P. kopenhagenii</i> (canina 1)	Papua New Guinea, Sérusiaux & al., 2009	FJ527269
<i>P. kopenhagenii</i> (canina 1)	Papua New Guinea, Sérusiaux & al., 2009	FJ527271
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448788
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448789
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448790
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448791
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448792
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448793
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448794
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448795
<i>P. canina</i> 1	Finland, Fedrowitz & al., 2011	HM448796
<i>P. canina</i> 1	Poland, Miadlikowska & al., 2003	AY257953
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708877
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708878
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708879
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708880
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708891
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708882

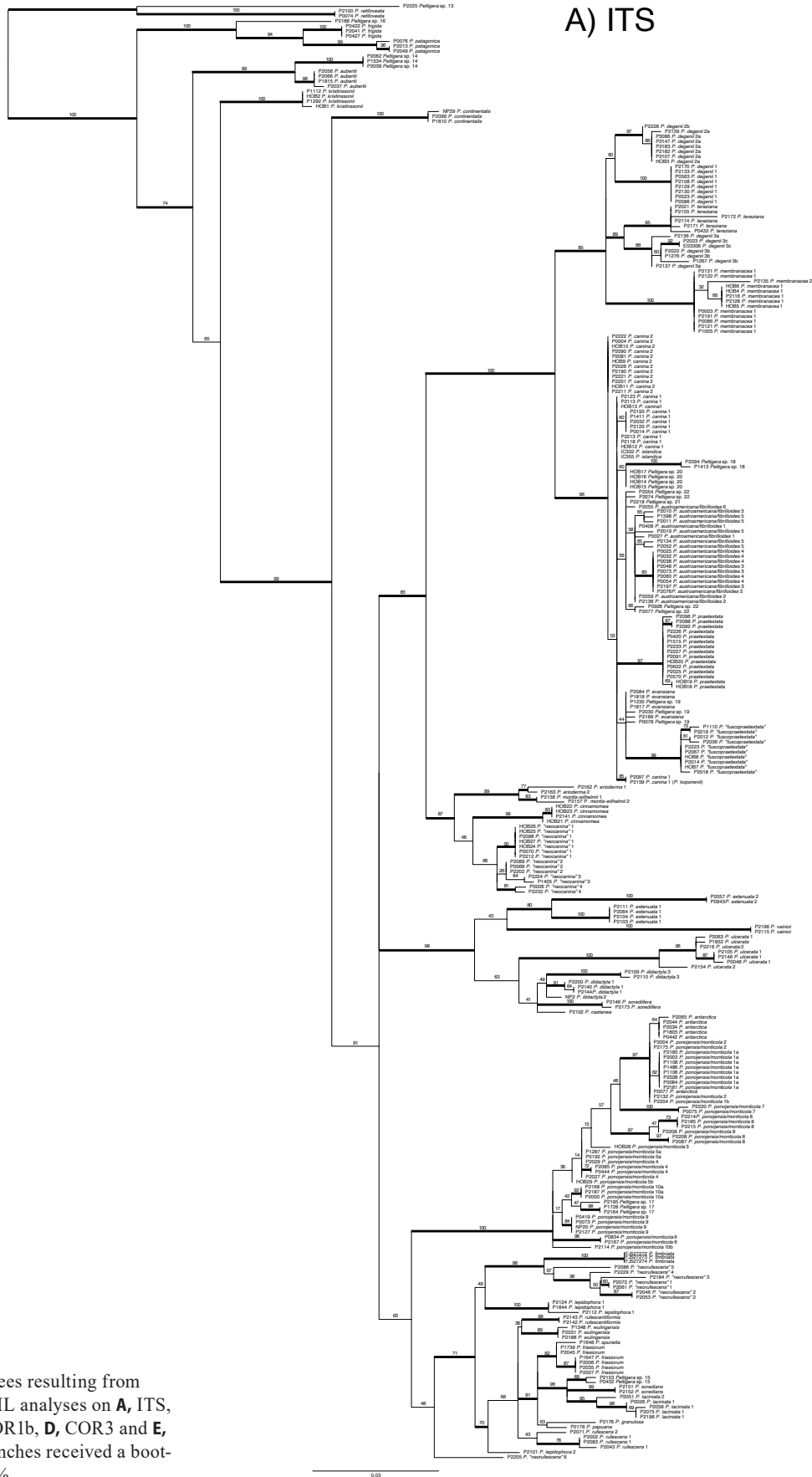
Table S6. Continued.

Species	Geographic origin and reference	ITS GenBank No.
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708883
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708884
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708885
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708886
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708887
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708888
<i>P. canina</i> 1	Canada, BC, O'Brien & al., 2013	FJ708889
<i>P. canina</i> 2	Canada, Miadlikowska & al., 2003	AY257896
<i>P. canina</i> 2	Canada, Miadlikowska & al., 2003	AY257952
<i>P. canina</i> 2	Canada, BC, O'Brien & al., 2013	FJ708873
<i>P. evansiana</i>	Canada, Miadlikowska & al., 2003	AY257950
<i>P. evansiana</i>	Canada, Miadlikowska & al., 2003	AY257951
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708894
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708895
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708896
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708897
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708898
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708899
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708900
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708902
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708901
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	KC437607
<i>P. "fuscopraetextata"</i>	Canada, BC, O'Brien & al., 2013	FJ708903
<i>P. "fuscopraetextata"</i>	Canada, Miadlikowska & al., 2003	AY257948
<i>P. "fuscopraetextata"</i>	Canada, Miadlikowska & al., 2003	AY257949
<i>P. "fuscopraetextata"</i>	Canada, Miadlikowska & al., 2003	AY257911
<i>P. "fuscopraetextata"</i>	USA, Miadlikowska & al., 2003	AY257912
<i>P. praetextata</i>	Canada, BC, O'Brien & al., 2013	KC437648
<i>P. praetextata</i>	Canada, BC, O'Brien & al., 2013	KC437650
<i>P. praetextata</i>	Canada, Miadlikowska & al., 2003	AY257900
<i>P. praetextata</i>	Canada, Miadlikowska & al., 2003	AY257914
<i>P. praetextata</i>	Canada, Miadlikowska & al., 2003	AY257947
<i>P. praetextata</i>	Finland, Fedrowitz & al., 2011	HM448797
<i>P. praetextata</i>	France, Miadlikowska & al., 2003	AY257945
<i>P. praetextata</i>	South Korea, Wei & al., 2009	GQ292454
<i>P. praetextata</i>	South Korea, Wei & al., 2009	GQ292463
<i>P. praetextata</i>	Poland, Miadlikowska & al., 2003	AY257943
<i>P. praetextata</i>	Poland, Miadlikowska & al., 2003	AY257944
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527245
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527247
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527248
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527249
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527250
<i>P. papuana</i>	Papua New Guinea, Sérusiaux & al., 2009	FJ527251

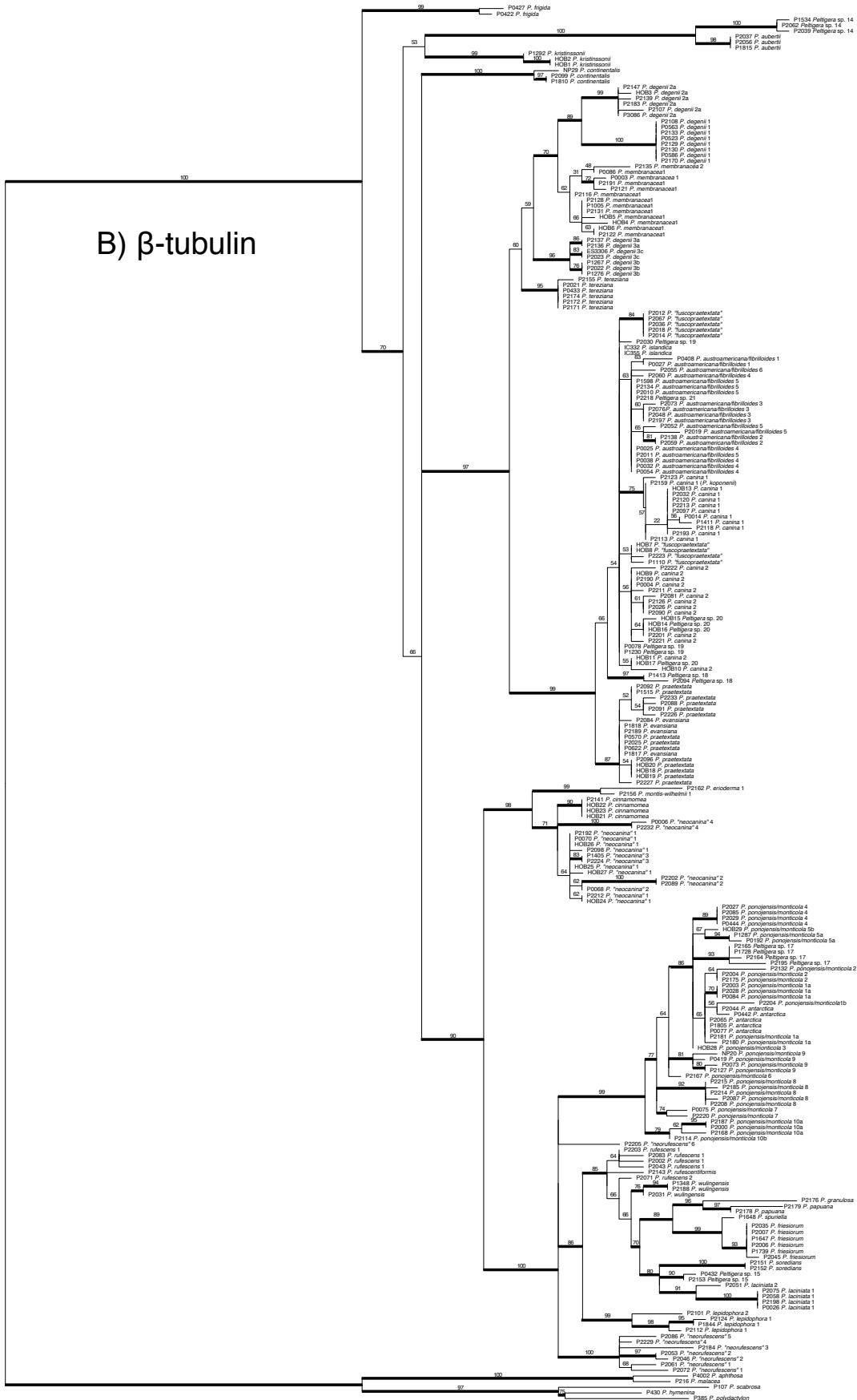


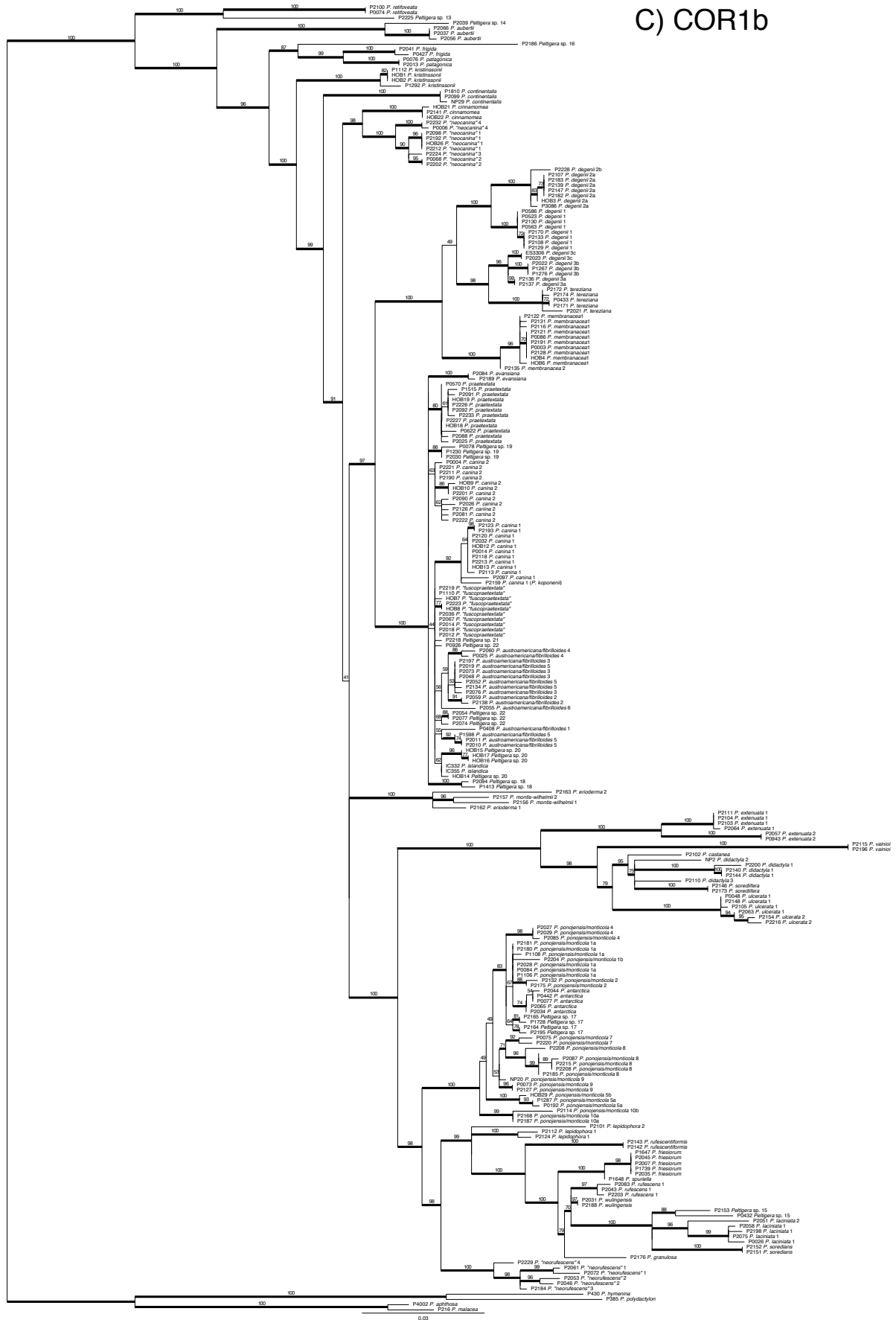
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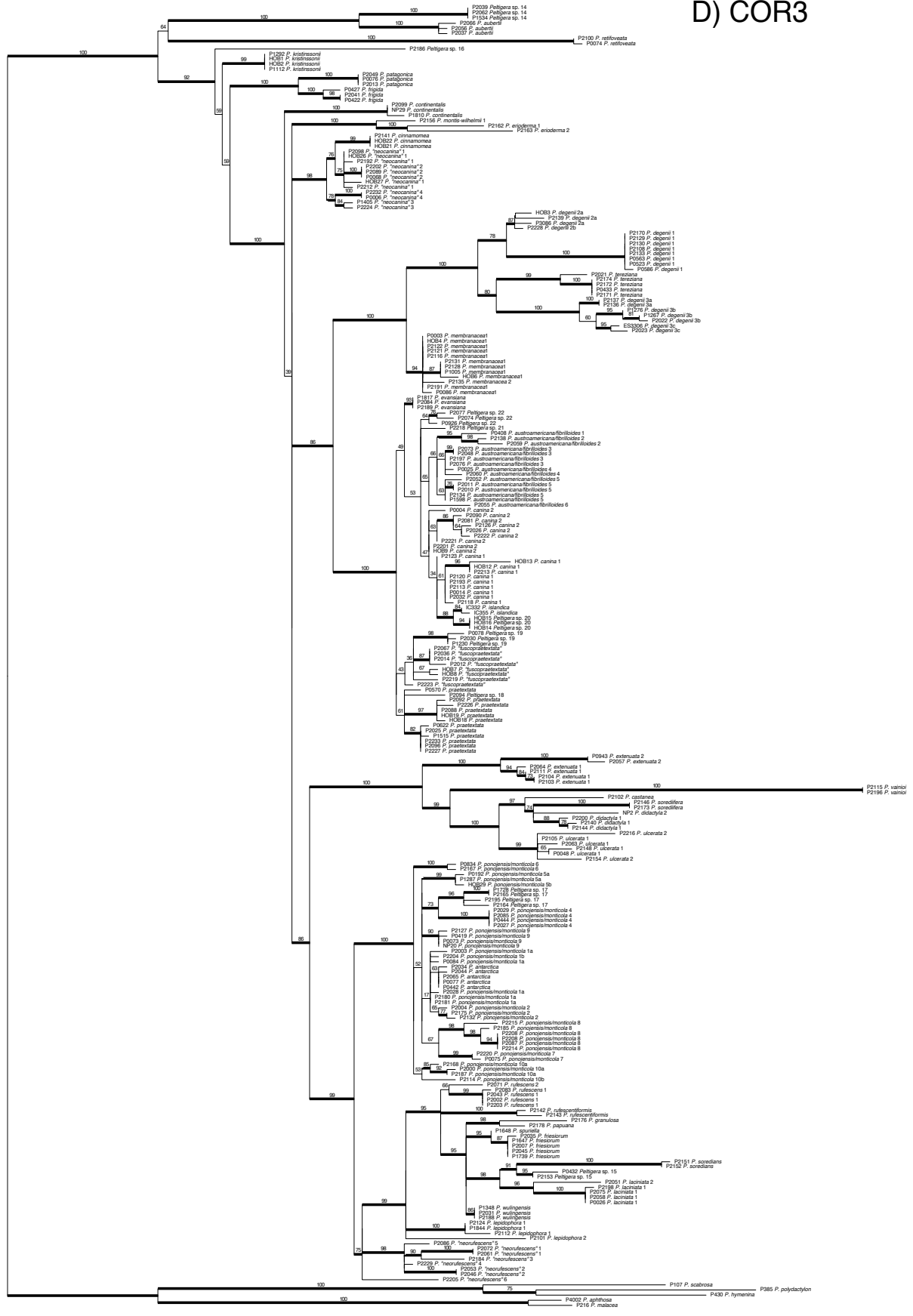


**Fig. S1.** Best ML trees resulting from single-locus RaxML analyses on **A**, ITS, **B**,  $\beta$ -tubulin, **C**, COR1b, **D**, COR3 and **E**, COR16. Thick branches received a bootstrap support  $\geq 70\%$ .





D) COR3





**Fig. S2.** Sequences of 201 different ITS1 hypervariable regions (ITS1-HR; positions 182–335 of the ITS1 alignment) found in 537 individuals representing newly delimited *Peltigera* species from sections *Peltigera* and *Retifoveatae*. Thick dashed lines separate clades recognized within the sections (see Fig. 1), whereas thin dashed lines separate putative species recognized based on the species validation approach and ordered according to their phylogenetic relationships within each clade (see Fig. 1). Numbers in parentheses indicate the number of individuals represented by each sequence type. The length of the sequence is provided in square brackets. To enhance the visualization of nucleotide sequence patterns of the ITS1-HR region, sequences were aligned within each putative species or among species within selected clades.

**Clade 1 (*P. retifoveata* clade)**

**Section *Retifoveatae***

<i>P. retifoveata</i>	(5)	[54]	GGGCGGGTTTGGGAAAGGAGTTATTTTTGGTTTAAATTTGCC
<i>P. sp. 13</i>	(1)	[57]	GGGTGTTGAGTATAAAAAATTTGTTTGAAGATTTTTTTTAAATTTCCAGCCG

**Clade 2a (*P. sp.* clade)**

**Section *Peltigera***

<i>P. sp. 14</i>	(2)	[52]	GGCGTAGTTATTGGGTAAAAAAAATTTTTTTT::GGCTTAAATTTGCC
<i>P. sp. 14</i>	(1)	[52]	GGCGTAGTTATTGGGTAAAAAAAATTTTTTTT::GGCTTAAATTTGCC
<i>P. sp. 14</i>	(1)	[51]	GGCGTAGTTATTGGGTAAAAAAAATTTTTTTT::GGCTTAAATTTGCC
<i>P. aubertii</i>	(2)	[51]	GGCGTAGTTATTGGGTAAAAA::CTTTTTTTTGGCTTAAATTTGCC
<i>P. aubertii</i>	(4)	[50]	GGCGTAGTTATTGGGTAAAAA::CTTTTTTTTGGCTTAAATTTGCC

**Clade 2b (*frigida* clade)**

<i>P. sp. 16</i>	(1)	[78]	GGGCGGGTTCTTGGCTTAAAACAAAAATATAATATAATAATTTTTTTTGTTCCTGGTCCCTTGCTTTGCC
<i>P. frigida</i>	(2)	[81]	GGCGGGTTCTTGGCTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. frigida</i>	(2)	[79]	GGCGGGTTCTTGGCTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. frigida</i>	(2)	[79]	GGCGGGTTCTTGGCTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. patagonica</i>	(1)	[76]	GGCGGGTTCTTGGCTTTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. patagonica</i>	(1)	[71]	GG::GGTTCTTGGCTTTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. patagonica</i>	(1)	[69]	GGCGGGTTCTTGGCTTTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC
<i>P. patagonica</i>	(1)	[68]	GGCGGGTTCTTGGCTTTTAAAAAAAATAAAAATAAATTTTTTTTGTTCCTTAGGCTTTGCC

**Clade 2c (*P. kristinssonii* clade)**

<i>P. kristinssonii</i>	(21)	[80]	GGCGGAGTTCTGACTTTATTAAATAACTAAAGAAATTTTTTTTTTATTTATTTTTTTGGTCTAAATGATTTGCC
<i>P. kristinssonii</i>	(1)	[80]	GGCGGAGTTCTGACTTTATTAAATAACTAAAGAAATTTTTTTTTTATTTATTTTTTTGGTCTAAATGATTTGCC
<i>P. kristinssonii</i>	(1)	[79]	GGCGGAGTTCTGACTTTATTAAATAACTAAAGAAATTTTTTTTTTATTTATTTTTTTGGTCTAAATGATTTGCC
<i>P. kristinssonii</i>	(1)	[79]	GGCGGAGTTCTGACTTTATTAAATAACTAAAGAAATTTTTTTTTTATTTATTTTTTTGGTCTAAATGATTTGCC

**Clade 3 (*P. continentalis* clade)**

<i>P. isidiophora</i>	(1)	[86]	TTTCTTTAAAAAAAAGGGGGGGGGGGGGTTGAGAAAAAAAATTTTTTTTTTATTTATTTTTTTGGTCTTAATGATTTGCC
<i>P. isidiophora</i>	(1)	[86]	CTTTTTCTAAAAAAAAGGGGGGGGGGGGGGGGAGAAAAAAAATTTTTTTTTTATTTATTTTTTTGGTCTTAATGATTTGCC
<i>P. isidiophora</i>	(1)	[86]	CTTTTTTTAAAAAAAAGGGGGGGGGGGGGGGGAAAAAAAATTTTTTTTTTATTTATTTTTTTGGTCTTAATGATTTGCC
<i>P. continentalis</i>	(1)	[89]	GGGTGGTTGGCTTACTCTTTTTTTTTTTTTTTTATTTATTTAAAAAAAATTTTTTTTTTGGTCTTAATGATTTGCC
<i>P. continentalis</i>	(1)	[84]	GGGTGGTTGGCTTACTCTTTTTTTTTTTTTTTTTT::TTAAT:AAAAAAAATTTTTTTTTTGGTCTTAATGATTTGCC
<i>P. continentalis</i>	(1)	[81]	GGGTGGTTGGCTTACTCTTTTTTTTTTTATTTTTT::ATT:AAAAAAAATTTTTTTTTTGGTCTTAATGATTTGCC
<i>P. continentalis</i>	(1)	[NA]	????????GGCTTACTCTTTTTTTTTTTTTTTTTT::ATT:AAAAAAAATTTTTTTTTTGGTCTTAATGATTTGCC

**Clade 4 (*P. didactyla* clade)**

<i>P. extenuata</i> 1	(15)	[66]	GGGCCC GGTA TGGCTTTCCCA TCTACTTTTCTATTA::GAAAAGTAAGAAAGTTTGTGATGTGGCT
<i>P. extenuata</i> 2	(3)	[68]	GGGCCC GGTA TGGCTTTTCTGATTATTTTCCA TTAAGGAAAAAGGAAAGTCTTGTGATGTGGCT
<i>P. vainioi</i>	(1)	[56]	GGGCCC GGTA TGGCTTTTCTAAATTTTTTTTTTTTTT::AAGCTTGTGATGTGGCT
<i>P. vainioi</i>	(1)	[54]	GGGCCC GGTA TGGCTTTTCTAAATTTTTTTTTTTTTT::AAGCTTGTGATGTGGCT
<i>P. vainioi</i>	(1)	[58]	GGGCCC GGTA TGGCTTTTCTAAATTTTTTTTTTTTTTTAAGCTTGTGATGTGGCT
<i>P. ulcerata</i> 1	(4)	[53]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 1	(2)	[50]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 1	(1)	[56]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAAGAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 1	(1)	[53]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 1	(1)	[56]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 2	(3)	[59]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAAGAAAAGTCTTGTGATGTGGCT
<i>P. ulcerata</i> 2	(1)	[57]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAA::GCTTGTGATGTGGCT
<i>P. ulcerata</i> 2	(1)	[56]	GGGCCC GGTA TGGCTTTTCTACTTTTCAAAAAAGAAA::GCTTGTGATGTGGCT
<i>P. didactyla</i> 1	(5)	[50]	GGGCCC GGTA TGGATTTTTTATTTTAAAAAAG::TCTTGTGATGTGGCT
<i>P. didactyla</i> 2	(2)	[52]	GGGCCC GGTA TGGATTTTTTTTTT::AAAAAAAAGAA TCTTGTGATGTGGCT
<i>P. didactyla</i> 2	(1)	[53]	GGGCCC GGTA TGGATTTTTTTTTT::AAAAAAAAGAA TCTTGTGATGTGGCT
<i>P. didactyla</i> 3	(6)	[44]	GGGCCC GGTA TGGATTTTTTTTTT::AAAA::GCTTGTGATGTGGCT
<i>P. didactyla</i> 3	(1)	[45]	GGGCCC GGTA TGGATTTTTTTTTT::AAAA::GCTTGTGATGTGGCT
<i>P. soredeiifera</i>	(7)	[42]	GGGCCC GGTA TGGATTTTTTATAAAGTCTTGTGATGTGGCT
<i>P. castanea</i>	(3)	[53]	GGGCCC GGTA TGGAA TTTTTTTTTTTT:AAAAAAAAGTCTTGTGATGTGGCT
<i>P. castanea</i>	(1)	[54]	GGGCCC GGTA TGGAA TTTTTTTTTTTT:AAAAAAAAGTCTTGTGATGTGGCT
<i>P. castanea</i>	(1)	[50]	GGGCCC GGTA TGGAA TTTTTTTTTTTT:AAAAAAGTCTTGTGATGTGGCT

**Clade 5 (*P. ponojensis/monticola* clade)**

<i>P. antarctica</i>	(6)	[36]	GGGCAAGCGTGGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 1a	(9)	[36]	GGGCAAGCGTGGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 1b	(1)	[36]	GGGCAAGCGTGGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 2	(3)	[36]	GGGCAAGCGTGGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 3	(1)	[32]	GGG::G::GGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 4	(4)	[34]	GGG::GCGGGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 5a	(2)	[32]	GGG::G::GGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 5b	(1)	[32]	GGG::G::GGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. ponojensis/monticola</i> 8	(6)	[32]	GGG::G::GGTTT:GGCTTTTA::TGTGATGTGGCT
<i>P. sp. 17</i>	(6)	[44]	GGG::G::GGTTT:GGCTTTTATT:AAAAAGTTGTGATGTGGCT
<i>P. sp. 17</i>	(1)	[45]	GGG::G::GGTTT:GGCTTTTATT:AAAAAGTTGTGATGTGGCT
<i>P. ponojensis/monticola</i> 6	(4)	[43]	GGG::G::GGTTT:GGCTTTTATT:AAAAAGTTGTGATGTGGCT
<i>P. ponojensis/monticola</i> 6	(1)	[38]	GGG::G::GGTTT:GGCTTTTATT:AAAAAGTTGTGATGTGGCT









