Supplementary Materials

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Supplementary Table S1. Species designation from this study and prior to this study, collection information, and GenBank accession numbers for specimens of *Sheathia* used in this study

	Species	Previous name	Location, collector, date, herbarium voucher, specimen code	*rbc*L	COI	Citation
Homocortication						
1	*Sheathia abscondita*	-	USA: California, South Fork Garcia River above Garcia River, 38.8553 N, 123.56022 W, R. Fadness, Jul 15, 2015, UC2085028, BHO A-1653, 113GAR110	***MT441833***	***MT441852***	This study
2a	*S. abscondita*	-	USA: Washington KC05, no voucher	*DQ393129*	-	Vis et al. (2010)
2b	*S. abscondita*	-	USA: Washington KC01 BHO A-1665	-	-	This study
3	*S. abscondita*	-	USA: Hawaii 07370-00001	*KC596161*	-	Carlile and Sherwood (2013)
4	*S. assamica*	-	India	*MN481450*	-	Necchi et al. (2019)
5	*S. assamica*	-	India	*MN481451*	-	Necchi et al. (2019)
6	*S. arcuata*	*S. arcuata*	Bulgaria BG3	DQ393131	-	Vis et al. (2010)
7	*S. arcuata*	*S. arcuata*	France FR-V3	*JX669741*	-	Salomaki et al. (2014)
8	*S. arcuata*	*S. arcuata*	Italy	KM077035	-	Abdelahad et al. (2015)
9	*S. arcuata*	*S. arcuata*	Italy	KM077036	-	Abdelahad et al. (2015)
10	*S. arcuata*	*S. arcuata*	Italy	KM077037	-	Abdelahad et al. (2015)
11	*S. arcuata*	*S. arcuata*	Italy	KM077038	-	Abdelahad et al. (2015)
12	*S. arcuata*	*S. arcuata*	Italy	*KM077039*	***MT441853***	Abdelahad et al. (2015), this study
13	*S. arcuata*	*S. arcuata*	Italy	KM077040	-	Abdelahad et al. (2015)
14	*S. arcuata*	*S. arcuata*	Italy	KM077041	-	Abdelahad et al. (2015)
15	*S. arcuata*	*S. arcuata*	Italy	KM077042	-	Abdelahad et al. (2015)
16	*S. arcuata*	*S. arcuata*	Spain GDA-A 5199	KM593804	-	Chapuis (2016)
17	*S. arcuata*	*S. arcuata*	Spain	*KM593810*	*KM592945*	Chapuis (2016)
18	*S. arcuata*	*S. arcuata*	Spain	*KM593811*	*KM592946*	Chapuis (2016)
19	*S. arcuata*	*S. arcuata*	Spain	*KM593812*	*KM592947*	Chapuis (2016)
20	*S. arcuata*	*S. arcuata*	Spain	*KM593818*	-	Chapuis (2016)
21	*S. arcuata*	*S. arcuata*	Spain	*KM593824*	-	Chapuis (2016)
22	*S. arcuata*	*S. arcuata*	UK GB-1-2010	*JX669779*	-	Salomaki et al. (2014)
23	*S. arcuata*	*S. arcuata*	UK	KF186240	-	Salomaki et al. (2014)
24	*S. californica*	-	USA: California, Signal Creek at Big Cheese Road, 38.8748 N, 123.4937 W, R. Fadness, Aug 16, 2016, Type location, UC2085029, 113GAR178	***MT441834***	***MT441854***	This study
25	*S. californica*	-	USA: California, Clarks Creek above Hwy 199, 41.80827 N, 124.11215 W, no collector information, Jul 15, 2015, BHO A-1654, 103WER029	***MT441835***	-	This study
26	*S. californica*	-	Same location as above. no collector information, Jun 13, 2016, BHO A-1655, 103WER029	***MT441836***	***MT441855***	This study
27	*S. californica*	-	USA: California, Bear Creek ~1.4 miles above Canyon Creek, 40.90353 N, 123.01368 W, no collector information, Jul 20, 2015, BHO A-1656, 106WE1055	***MT441837***	-	This study
28	*S. californica*	-	USA: California, Soda Creek, 41.20016 N, 122.23029 W, no collector information, Sep 13, 2016, RS0199 personal collection, 525NC0199	**MT441838**	-	This study
29	*S. californica*	-	USA: California, Eel River, 39.680596 N, 123.657165 W, R. Stancheva, Sep 1, 2017, BHO A-1446	***MT441839***	-	This study
30	*S. dispersa*	-	Nepal	*MN487058*	-	Necchi et al. (2019)
31	*S. dispersa*	-	Nepal	*MN487059*	-	Necchi et al. (2019)
32	*S. dispersa*	*S. arcuata*	Indonesia	KF557553	-	Johnston et al. (2014)
33	*S. dispersa*	*S. arcuata*	Indonesia	KF557554	-	Johnston et al. (2014)
34	*S. dispersa*	*S. arcuata*	USA: Hawaii	*KC596123*	KC596286	Carlile and Sherwood (2013)
35	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596124	KC596287	Carlile and Sherwood (2013)
36	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596125	KC596288	Carlile and Sherwood (2013)
37	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596126	KC596289	Carlile and Sherwood (2013)
38	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596127	KC596290	Carlile and Sherwood (2013)
39	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596128	KC596291	Carlile and Sherwood (2013)
40	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596129	KC596292	Carlile and Sherwood (2013)
41	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596130	KC596294	Carlile and Sherwood (2013)
42	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596131	KC596295	Carlile and Sherwood (2013)
43	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596132	KC596296	Carlile and Sherwood (2013)
44	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596133	KC596297	Carlile and Sherwood (2013)
45	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596134	KC596298	Carlile and Sherwood (2013)
46	*S. dispersa*	*S. arcuata*	USA: Hawaii	*KC596135*	*KC596299*	Carlile and Sherwood (2013)
47	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596136	KC596300	Carlile and Sherwood (2013)
48	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596137	KC596301	Carlile and Sherwood (2013)
49	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596138	KC596302	Carlile and Sherwood (2013)
50	*S. dispersa*	*S. arcuata*	USA: Hawaii	*KC596139*	*KC596303*	Carlile and Sherwood (2013)
51	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596140	KC596304	Carlile and Sherwood (2013)
52	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596141	-	Carlile and Sherwood (2013)
53	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596142	-	Carlile and Sherwood (2013)
54	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596143	KC596305	Carlile and Sherwood (2013)
55	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596144	-	Carlile and Sherwood (2013)
56	*S. dispersa*	*S. arcuata*	USA: Hawaii	*KC596145*	KC596306	Carlile and Sherwood (2013)
57	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596146	KC596307	Carlile and Sherwood (2013)
58	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596147	KC596308	Carlile and Sherwood (2013)
59	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596148	KC596309	Carlile and Sherwood (2013)
60	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596149	-	Carlile and Sherwood (2013)
61	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596150	-	Carlile and Sherwood (2013)
62	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596151	-	Carlile and Sherwood (2013)
63	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596152	-	Carlile and Sherwood (2013)
64	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596153	KC596310	Carlile and Sherwood (2013)
65	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596154	KC596311	Carlile and Sherwood (2013)
66	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596155	KC596312	Carlile and Sherwood (2013)
67	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596156	KC596313	Carlile and Sherwood (2013)
68	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596157	-	Carlile and Sherwood (2013)
69	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596158	KC596314	Carlile and Sherwood (2013)
70	*S. dispersa*	*S. arcuata*	USA: Hawaii	KC596159	KC596315	Carlile and Sherwood (2013)
71	*S. dispersa*	*S. arcuata*	USA: Hawaii	*KC596160*	*KC596316*	Carlile and Sherwood (2013)
72	*S. dispersa*	*S. arcuata*	USA: Hawaii	-	KC596293	Carlile and Sherwood (2013)
73	*S. dispersa*	*S. arcuata*	USA: Hawaii	*EF116869*	-	Chiasson et al. (2007)
74	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116870	-	Chiasson et al. (2007)
75	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116871	-	Chiasson et al. (2007)
76	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116872	-	Chiasson et al. (2007)
77	*S. dispersa*	*S. arcuata*	USA: Hawaii	*EF116873*	-	Chiasson et al. (2007)
78	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116874	-	Chiasson et al. (2007)
79	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116875	-	Chiasson et al. (2007)
80	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116876	-	Chiasson et al. (2007)
81	*S. dispersa*	*S. arcuata*	USA: Hawaii	EF116877	-	Chiasson et al. (2007)
82	*S. dispersa*	*S. arcuata*	Taiwan	*DQ141320*	-	Chou and Wang (2006)
83	*S. dispersa*	*S. arcuata*	Taiwan TW05	GU457350	-	Vis et al. (2010)
84	*S. dispersa*	*S. arcuata*	Taiwan TW10	*GU457349*	*JX669681*	Vis et al. (2010), Salomaki et al. (2014)
85	*S. dispersa*	*S. arcuata*	Taiwan TW21	*GU457348*	-	Vis et al. (2010)
86	*S. indonepalensis*	-	India	*MN481449*	-	Necchi et al. (2019)
87	*S. indonepalensis*	-	Nepal	*MN487060*	-	Necchi et al. (2019)
88	*S. longipedicellata*	*S. arcuata*	China SAS07001	*HQ677186*, GU457347	*KC511075*	Li et al. (2010), Vis et al. (2010), Ji et al. (2014)
89	*S. longipedicellata*	*S. arcuata*	China SAS06032	JN086517	-	Ji et al. (2011)
90	*S. longipedicellata*	*S. arcuata*	China SAS05707	JN086518	-	Ji et al. (2011)
91	*S. longipedicellata*	*S. arcuata*	China SAS06218	JN086519	-	Ji et al. (2011)
92	*S. longipedicellata*	*S. arcuata*	China SAS07003	*GU457346*, JN086520	-	Vis et al. (2010), Ji et al. (2011)
93	*S. longipedicellata*	*S. arcuata*	China SAS090331	JN086521	-	Ji et al. (2011)
94	*S. longipedicellata*	*S. arcuata*	China SAS090318	JN086522	-	Ji et al. (2011)
95	*S. longipedicellata*	*S. hongdongensis*	China SAS06009	*HQ677187*	*KC511071*	Li et al. (2010), Ji et al. (2014)
96	*S. longipedicellata*	*S. jinchengensis*	China SAS17010	*MH356749*	-	Han et al. (2018)
97	*S. longipedicellata*	*S. matouensis*	China	*MK746107*	-	Han et al. (2019)
98	*S. longipedicellata*	*S. longipedicellata*	China JS2006003	*HQ677188*	*KC511072*	Li et al. (2010)
99	*S. murpheyi*	-	Zambia	*MN974517*	*MN974522*	Szinte et al. (2020)
100	*S. plantuloides*	-	Ireland: Glenamoy River, 54.24112523 N, 9.69784333 W, B. Kennedy, Oct 16, 2016, BHO A-1349 (blue colored)	**MT441840**	-	This study
101	*S. plantuloides*	-	Ireland: Avonbeg River, 52.88503407 N, 6.23233592 W, B. Kennedy, Oct 10, 2016, BHO A-1350 (red colored)	***MT441841***	-	This study
102	*S. plantuloides*	-	Ireland: Owentocker River, 54.76333356 N, 8.41880094 W, L. Williams & B. Kennedy, May 31, 2016, BHO A-1351 (red colored)	**MT441842**	-	This study
103	*S. plantuloides*	-	Ireland: Munhin River, 54.14493328 N, 9.80403706 W, B. Kennedy, Oct 16, 2016, BHO A-1367b (blue colored)	**MT441843**	-	This study
104	*S. plantuloides*	-	Ireland: Altaconey River, 53.99396745 N, 9.57281218 W, B. Kennedy, Aug 16, 2017, BHO A-1464 (blue colored)	MT441844	-	This study
105	*S. plantuloides*	-	Ireland: Ballinaboy River, 53.463131 N, 10.00683964 W, B. Kennedy, Oct 4, 2017, BHO A-1470 (blue and red colored)	**MT441845**	-	This study
106	*S. plantuloides*	-	Ireland: Culfin River, 53.59496265 N, 9.84536861 W, B. Kennedy, Oct 26, 2017, BHO A-1471 (blue and red colored)	**MT441846**	-	This study
107	*S. plantuloides*	-	Ireland: Bunowen River, 53.76235484 N, 9.80978381 W, B. Kennedy, Sep 14, 2017, BHO A-1472 (blue and red colored)	***MT441847***	***MT441856***	This study
108	*S. plantuloides*	-	Poland: Jedlica S., Kowary, 50.802549 N, 15.824564 E, J. Kwandrans, P. Eloranta & W. Kowalski, May 23, 2011, PL-23-2011, BHO A-1657	**MT441848**	-	This study
109	*S. plantuloides*	-	Poland: River Bóbr, 51.256233 N, 15.520893 E, J. Kwandrans, P. Eloranta & W. Kowalski, May 16, 2011, PL-5-2011, BHO A-1658	**MT441849**	-	This study
110	*S. plantuloides*	-	Poland: Prądnik River, 50.242541 N, 19.783659 E, J. Kwandrans & P. Eloranta, Apr 12, 2012, PL-56-2012, BHO A-1659	**MT441850**	-	This study
111	*S. plantuloides*	-	Finland: Haapamäenkoski, Jämsä, 61.742290 N, 24.752009 E, J. Kwandrans & P. Eloranta, Aug 19, 2011, FI-38-2011, BHO A-1660	**MT441851**	-	This study
112	*S. transpacifica*	-	USA: Washington, KC13, BHO A-1663	*DQ393130*	***MT441857***	Vis et al. (2010)
113	*S. transpacifica*	-	New Zealand TJE3094, BHO A-1664	AY297054	-	Vis et al. (2010)
Heterocortication						
	S. americana	-	USA: Alabama	*JX669736*	*JX669679*	Salomaki et al. (2014)
	S. americana	-	USA: New York	*JX669793*	*JX669723*	Salomaki et al. (2014)
	S. boryana	-	Poland	*JX669772*	*JX669706*	Salomaki et al. (2014)
	S. confusa	-	Finland	*JX669774*	*JX669708*	Salomaki et al. (2014)
	S. confusa	-	Italy	*JX669737*	*JX669683*	Salomaki et al. (2014)
	S. exigua	-	Bulgaria	*GU457345*	*JX669616*	Vis et al. (2010), Salomaki et al. (2014)
	S. grandis	-	USA: Ohio	*JX669761*	*JX669699*	Salomaki et al. (2014)
	S. grandis	-	USA: Wisconsin	*JX669762*	*JX669700*	Salomaki et al. (2014)
	S. heterocortica	-	USA: Florida	*JX669788*	*JX669718*	Salomaki et al. (2014)
	S. heterocortica	-	USA: Georgia	*JX669763*	*JX669734*	Salomaki et al. (2014)
	S. heterocortica	-	USA: North Carolina	*JX669789*	*JX669719*	Salomaki et al. (2014)
	S. involuta	-	USA: Michigan	*JX669748*	*JX669690*	Salomaki et al. (2014)
	S. involuta	-	USA: Virginia	*JX669743*	*JX669685*	Salomaki et al. (2014)
	S. involuta	-	USA: Texas	*JX669786*	*JX669717*	Salomaki et al. (2014)

New sequences in bold. Sequences used in the phylogenetic analyses in italics. Specimens are divided into those in clades with homocortication (cylindrical cells) and heterocortication (cylindrical and bulbous cells).

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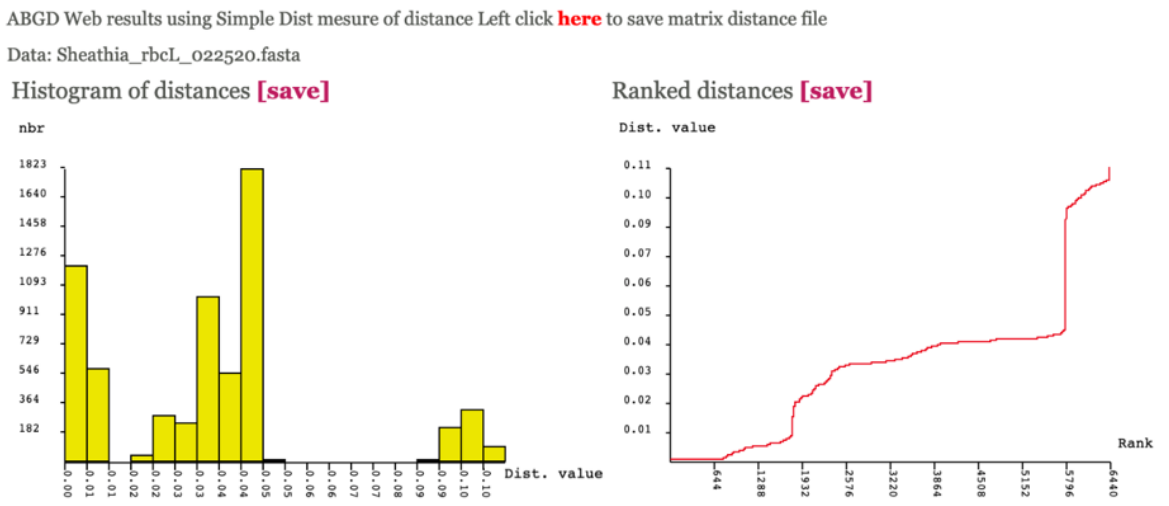
Supplementary Table S2. Outgroup sequences used for phylogenetic analyses

Taxon	GenBank No.	
	*rbc*L	COI-5P
Batrachospermales		
Acarposporophycos brasiliensis	FJ386458	KU672388
Batrachospermum gelatinosum	GU810833	KM055327
Kumanoa holtonii	JN590004	JN604921
Kumanoa louisianae	JN590005	JN604924
Kumanoa procarpa	FJ386464	KM055332
Lemanea fluviatilis	KM055243	KM055333
Lemanea fucina	KJ825958	KU672391
Lympha mucosa	KM593865	KM593873
Montagnia australis	EU106056	KT802766
Montagnia macrospora	EU106060	KU672389
Nocturama antipodites	FJ386456	KT802754
Nothocladus diatyches	KT802848	KT802758
Nothocladus theaquus	KT802863	KT802763
Paludicola keratophyta	KJ825960	MN943976
Paludicola leafensis	MN943934	MN943981
Paludicola johnhallii	MN943932	MN943975
Paludicola turfosa	MN943940	MN943985
Paralemanea sp.	GQ285124	KM055335
Petrohua bernabei	AY960690	KM055336
Psilosiphon scoparius	AF029155	KU672392
Sirodotia delicatula	DQ646474	KU672394
Sirodotia huillensis	AF029157	EU636739
Sirodotia suecica	JF344718	KM055337
Torularia atra	KT802842	KT802757
Torularia puiggariana	FJ386462	KT802762
Tuomeya americana	KM055244	KM055330
Virescentia viride-americana	AF244112	KM055328
Virescentia viride-brasiliensis	KM078048	KM259993
Visia cayennensis	AY423393	KM055326
Visia sp.	KM055245	KM055325
Volatus carrrioni	KM593861	KM593866
Thoreales		
Nemalionopsis shawii	KM005141	KM055241
Thorea reikei	KM005140	KM055239

COI-5P, 5′ region of the cytochrome *c* oxidase subunit I.

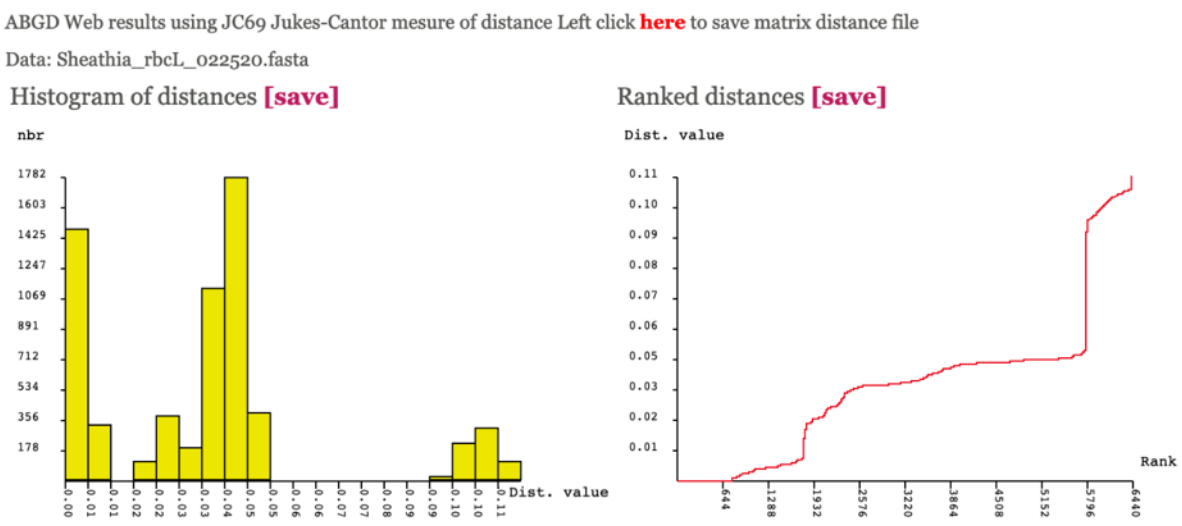
Partition with prior maximal distance p = 7.74e-03 Distance **Simple Dist** MinSlope = 1.500000

Group	No. of specimens	Species name	GenBank accessions
1	3	*S. abscondita*	MT441833, DQ393129, KC596161
2	6	*S. californica*	MT441834, MT441835, MT441836, MT441837, MT441838, MT441839
3	56	*S. dispersa* / *S. murphyi*	MN487058, MN487059, KF557553, KF557554, KC596123, KC596124, KC596125, KC596126, KC596127, KC596128, KC596129, KC596130, KC596131, KC596132, KC596133, KC596134, KC596135, KC596136, KC596137, KC596138, KC596139, KC596140, KC596141, KC596142, KC596143, KC596144, KC596145, KC596146, KC596147, KC596148, KC596149, KC596150, KC596151, KC596152, KC596153, KC596154, KC596155, KC596156, KC596157, KC596158, KC596159, KC596160, EF116869, EF116870, EF116871, EF116872, EF116873, EF116874, EF116875, EF116876, EF116877, DQ141320, GU457350, GU457349, GU457348, MN974517
4	18	*S. arcuata*	DQ393131, JX669741, JX669779, KF186240, KM077035, KM077036, KM077037, KM077038, KM077039, KM077040, KM077041, KM077042, KM593804, KM593810, KM593811, KM593812, KM593818, KM593824
5	13	*S. longipedicellata*	GU457346, GU457347, HQ677186, JN086517, JN086518, JN086519, JN086520, JN086521, JN086522, HQ677187, MH356749, HQ677188, MK746107
6	2	*S. assamica*	MN481450, MN481451
7	2	*S. indonepalensis*	MN481449, MN487060
8	12	*S. plantuloides*	MT441840, MT441841, MT441842, MT441843, MT441844, MT441845, MT441846, MT441847, MT441848, MT441849, MT441850, MT441851
9	2	*S. transpacifica*	AY297054, DQ393130



Partition with prior maximal distance p = 2.78e-03 Distance **JC69 Jukes-Cantor** MinSlope = 1.500000

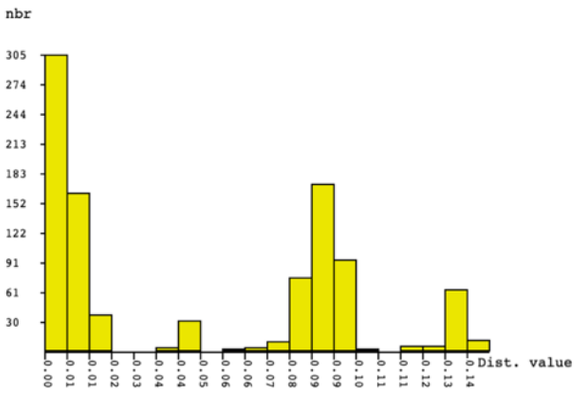
Group	No. of specimens	Species name	GenBank accessions
1	3	*S. abscondita*	MT441833, DQ393129, KC596161
2	18	*S. arcuata*	DQ393131, JX669741, JX669779, KF186240, KM077035, KM077036, KM077037, KM077038, KM077039, KM077040, KM077041, KM077042, KM593804, KM593810, KM593811, KM593812, KM593818, KM593824
3	13	*S. longipedicellata*	GU457346, GU457347, HQ677186, JN086517, JN086518, JN086519, JN086520, JN086521, JN086522, HQ677187, MH356749, HQ677188, MK746107
4	2	S. assamica	MN481450, MN481451
5	6	*S. californica*	MT441834, MT441835, MT441836, MT441837, MT441838, MT441839
6	4	*S. dispersa*	DQ141320, GU457348, GU457349, GU457350
7	2	*S. indonepalensis*	MN481449, MN487060
8	1	*S. murphyi*	MN974517
9	12	*S. plantuloides*	MT441840, MT441841, MT441842, MT441843, MT441844, MT441845, MT441846, MT441847, MT441848, MT441849, MT441850, MT441851
10	2	*S. transpacifica*	AY297054, DQ393130
11	35	*S. dispersa*	EF116869, EF116870, EF116871, EF116872, EF116874, EF116875, KC596123, KC596124, KC596125, KC596126, KC596127, KC596128, KC596129, KC596130, KC596133, KC596136, KC596139, KC596140, KC596141, KC596142, KC596143, KC596144, KC596146, KC596147, KC596148, KC596149, KC596150, KC596151, KC596152, KC596153, KC596154, KC596155, KC596156, KC596158, KC596159
12	11	-	EF116873, KC596131, KC596132, KC596134, KC596135, KC596137, KC596138, KC596145, KC596157, KF557553, KF557554
13	3	-	EF116876, EF116877, KC596160
14	2	-	MN487058, MN487059

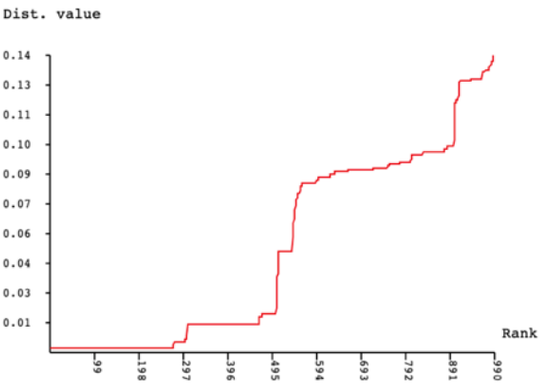


Supplementary Fig. S1. Results from Automatic Barcode Gap Discovery (ABGD) using all *rbc*L sequences for *Sheathia* species with homocortication in Supplementary Table S1.

Initial Partition with prior maximal distance p = 1.00e-03 Distance **Simple Dist** MinSlope = 1.500000

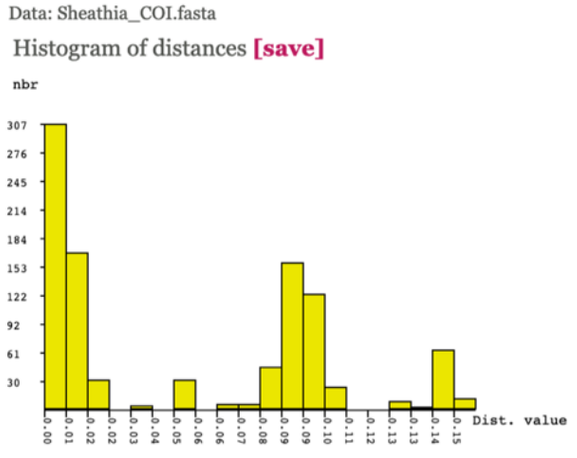
Group	No. of specimens	Species name	GenBank accessions
1	4	*S. arcuata*	KM592945, KM592946, KM592947
2	2	*S. californica*	MT441854, MT441855
3	24	*S. dispersa*	JX669681, KC596286, KC596287, KC596288, KC596289, KC596290, KC596291, KC596292, KC596293, KC596294, KC596297, KC596300, KC596303, KC596304, KC596305, KC596307, KC596308, KC596309, KC596310, KC596311, KC596312, KC596313, KC596314, KC596315
4	7	*S. dispersa*	KC596295, KC596296, KC596298, KC596299, KC596301, KC596302, KC596306
5	1	*S. dispersa*	KC596316
6	1	*S. abscondita*	MT441852
7	1	*S. transpacifica*	MT441857
8	1	*S. plantuloides*	MT441856
9	3	*S. longipedicellata*	KC511071, KC511072, KC511075
10	1	*S. murphyi*	MN974522

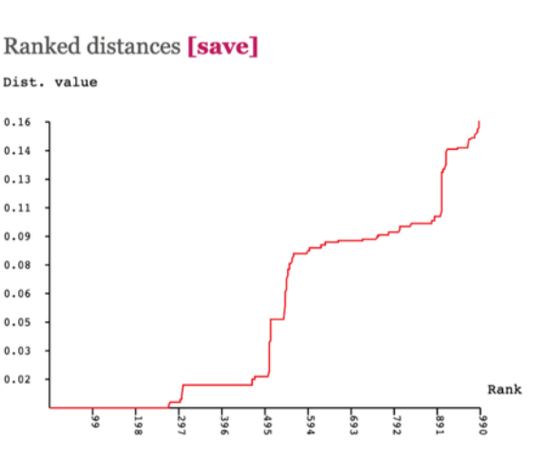




Partition with prior maximal distance p = 2.78e-03 Distance JC69 **Jukes-Cantor** MinSlope = 1.500000

Group	No. of specimens	Species name	GenBank accessions
1	4	*S. arcuata*	KM592945, KM592946, KM592947
2	2	*S. californica*	MT441854, MT441855
3	1	*S. dispersa*	JX669681
4	7	*S. dispersa*	KC596295, KC596296, KC596298, KC596299, KC596301, KC596302, KC596306
5	1	*S. dispersa*	KC596316
6	1	*S. abscondita*	MT441852
7	1	*S. transpacifica*	MT441857
8	1	*S. plantuloides*	MT441856
9	3	*S. longipedicellata*	KC511071, KC511072, KC511075
10	1	*S. murphyi*	MN974522
11	23	*S. dispersa*	KC596286, KC596287, KC596288, KC596289, KC596290, KC596291, KC596292, KC596293, KC596294, KC596297, KC596300, KC596303, KC596304, KC596305, KC596307, KC596308, KC596309, KC596310, KC596311, KC596312, KC596313, KC596314, KC596315





Supplementary Fig. S2. Results from Automatic Barcode Gap Discovery (ABGD) using all 5′ region of the cytochrome *c* oxidase subunit I (COI-5P) sequences for *Sheathia* species with homocortication in Supplementary Table S1.