



Supplementary material

# Phylogenetic Placement and Taxonomic Reinvestigation of Endemic and Endangered Plant Species: *Silene leucophylla* Boiss. and *Silene schimperiana* Boiss. (Caryophyllaceae)

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**Table S1.** Qualitative characteristics of stem and leaf Abaxial leaf (AB) and Adaxial leaf (AD) characters of *Silene leucophylla* and *Silene schimperiana*.

Characters	<i>Silene leucophylla</i> Boiss.	<i>Silene schimperiana</i> Boiss.
<b>Stem characters</b>		
Surface	Pubescent	Glabrous
Epicuticular Wax	Thin layer	Irregular crustose platelets
Trichomes	Present	Absent
Trichomes Type	Unicellular, non-glandular	Absent
Trichome Surface	Densely pustulate	Absent
Trichomes Length	45–98 µm	Absent
Trichomes Width	13–23 µm	Absent
Stomata Type	Anomocytic	Anomocytic
<b>Abaxial leaf (AB) characters</b>		
Epidermal Cell Shape	Irregular oblong to bone-shape	Parallel tetra- to polygonal
Anticlinal Walls	Sunken channeled irregularly curved	Sunken straight
The curvature of Outer Periclinal Walls	Convex	Slightly Convex
Fine Relief of the Cell Wall	Highly ribbed	Irregular epicuticular crustose platelets
Trichomes Type	Unicellular, non-glandular	Absent
Trichome Surface	Densely irregular pustulate	Absent
Trichomes Length	78–130 µm	Absent
Trichomes Width	18–20 µm	Absent
Stomata Type	Diacytic	Diacytic
Stomata Level	Raised	Sunken
Guard Cell Surface	Smooth	Irregular epicuticular crustose platelets
Pore Shape	Elliptic slit	Linear slit
<b>Adaxial leaf (AD) characters</b>		
Epidermal Cell Shape	Irregular oblong to bone-shape	Parallel penta- to polygonal
Anticlinal Walls	Sunken channeled irregularly curved	Sunken straight
The curvature of Outer Periclinal Walls	Convex	Slightly Convex
Fine Relief of the Cell Wall	Moderately ribbed	Irregular epicuticular crustose platelets
Trichomes Type	Unicellular, non-glandular	Absent
Trichome Surface	Densely irregular pustulate	Absent
Trichomes Length	75–125 µm	Absent
Trichomes Width	16–25 µm	Absent
Stomata Type	Diacytic	Diacytic
Stomata Level	Raised	Sunken
Guard Cell Surface	Smooth	Irregular epicuticular crustose platelets
Pore Shape	Elliptic slit	Elliptic + Linear slits

**Table S1.** Quantitative characteristics of stem and leaf Abaxial leaf (AB) and Adaxial leaf (AD) characters of *Silene leucophylla* and *Silene schimperiana*.

Characters	Abbreviations	Silene leucophylla							Silene schimperiana						
		Mean	SD	Media	Min	Max	Rang	SE	Mean	SD	Media	Min	Max	Range	SE
Stem characters															
Stomatal Pore Length	SPL	10.57	2.5	10.09	7.67	14.4	6.73	1.12	13.55	2.81	13.32	10.85	16.47	5.62	1.63
Stomatal Pore Width	SPW	1.89	0.87	1.33	1.16	2.88	1.71	0.39	1.47	0.46	1.72	0.95	1.75	0.8	0.26
Stomatal Pore Area	SPA	14.19	7.09	12.33	7.38	25.1	17.72	3.17	14.71	8.04	18.75	5.45	19.93	14.48	4.64
Stomatal Complex Length	SCL	21.9	2.16	21.9	20.37	23.43	3.05	1.53	19.05	2.67	17.78	17	23.49	6.49	0.94
Stomatal Complex Width	SCW	5.66	1.59	5.66	4.53	6.78	2.25	1.13	6.21	1.11	6.02	4.65	7.97	3.32	0.39
Stomatal Complex Area	SCA	107.40	29.41	107.4	86.61	128.19	41.59	20.7	88.84	17.83	89.65	63.05	119.72	56.66	6.31
Abaxial leaf (AB) characters															
Stomatal Pore Length	SPL.AB	9.34	1.36	8.89	8.41	11.74	3.33	0.61	15.33	1.25	15.67	13.6	17.15	3.55	0.47
Stomatal Pore Width	SPW.AB	1.82	0.5	1.84	1.03	2.33	1.3	0.22	1.72	0.66	1.49	1.06	2.62	1.56	0.25
Stomatal Pore Area	SPA.AB	11.79	5.11	13.92	5.36	17.38	12.02	2.29	15.26	5.66	13.76	9.36	23.84	14.48	2.14
Stomatal Complex Length	SCL.AB	15.18	2.61	14.28	11.84	18.19	6.35	0.87	22.14	1.8	22.56	19.19	23.69	4.5	0.81
Stomatal Complex Width	SCW.AB	5.37	0.6	5.6	4.51	6.13	1.63	0.2	8.55	1.25	8.31	7.06	10.51	3.45	0.56
Stomatal Complex Area	SCA.AB	61.42	8.56	63.79	46.44	74.64	28.21	2.85	151.82	21.4	149.01	125.33	185.13	59.8	9.57
Number of Lobes	NLP.AB	8.33	1.66	9	6	11	5	0.55	6.5	1.07	6	5	8	3	0.38
Epidermal Cell Length	ECL.AB	34.74	7.71	35.96	23.51	46.04	22.53	2.57	47.57	11.36	47.18	30.52	61.4	30.88	4.01
Epidermal Cell Width	ECW.AB	16.09	3.97	16.87	8.73	21.95	13.22	1.32	52.39	10.4	53.69	37.85	63.79	25.94	3.68
Subsidiary Cell Length	SBL.AB	41.43	4.02	42.44	32.66	45.72	13.06	1.34	56.58	5.03	56.89	50.77	61.77	11	2.52
Subsidiary Cell Width	SBW.AB	24.25	4.24	23.31	18.13	30.58	12.45	1.41	45.01	8.12	45.35	36.43	52.92	16.49	4.06
Subsidiary Cell Area	SBA.AB	740.64	201.8	767.86	450.1	1049.2	599.1	67.2	2306.2	920.7	2328.1	1287.0	3281.8	1994.7	460.3
Number of Stomata	SCN.AB	10	2.83	10	8	12	4	2	5	1.41	5.5	3	6	3	0.71
Number of Epidermal Cells	NEC.AB	73.5	19.09	73.5	60	87	27	13.5	30.75	2.22	31	28	33	5	1.11
Stomatal Index	SI.AB	11.94	0.25	11.94	11.76	12.12	0.36	0.18	13.78	2.81	14.84	9.68	15.79	6.11	1.41
Adaxial leaf (AD) characters															
Stomatal Pore length	SPL.AD	9.95	0.68	10.11	8.99	10.58	1.59	0.34	13.8	3.26	12.73	8.94	18.45	9.52	1.03
Stomatal Pore width	SPW.AD	1.67	0.42	1.75	1.15	2.03	0.88	0.21	2.29	0.62	2.14	1.67	3.58	1.91	0.2
Stomatal Pore area	SPA.AD	13.49	2.55	14	10.13	15.84	5.7	1.27	21.42	8.55	20.4	12.26	36.7	24.44	2.7
Stomatal Complex length	SCL.AD	16.32	1.4	16.38	14.29	18.71	4.42	0.39	20	1.25	19.94	17.9	22.51	4.61	0.36

Stomatal Complex width	SCW.AD	5.35	0.77	5.19	3.6	6.77	3.17	0.21	9.53	1.98	9.37	6.19	13.33	7.14	0.57
Stomatal Complex area	SCA.AD	64.85	9.97	60.12	54.65	81.03	26.38	2.77	152.3	37.92	147.69	102.2	253.5	151.3	10.95
Number of lobes	NLP.AD	8.55	1.29	8	7	11	4	0.39	7.07	1.28	7	5	10	5	0.33
Epidermal Cell length	ECL.AD	43.2	5.94	44.19	31.16	52.41	21.25	1.79	57.61	15.76	57.53	35.48	91.04	55.56	4.07
Epidermal Cell width	ECW.AD	19.6	5.45	18.25	12.79	26.97	14.19	1.64	48.83	16.59	43.97	32.47	80.59	48.12	4.28
Subsidiary Cell Length	SBL.AD	47.76	5.25	47.76	38.05	58.57	20.52	1.52	76.92	18.43	71.6	54	117.97	63.97	4.61
Subsidiary Cell Width	SBW.AD	28.14	4.19	28.18	21.69	35.43	13.75	1.21	48.82	10.38	47.58	32.69	62.67	29.97	2.59
Subsidiary Cell Area	SBA.AD	1049.0	167.8	1074.5	740.8	1304.8	563.9	48.4	2863.3	663.9	2778.2	1782.3	4048.7	2266.4	165.9
Number of Stomata	SCN.AD	8	1	8	7	9	2	0.58	4.75	0.96	4.5	4	6	2	0.48
Number of Epidermal Cells	NEC.AD	54.67	5.69	53	50	61	11	3.28	27	3.27	27	23	31	8	1.63
Stomatal Index	SI.AD	12.89	2.49	13.11	10.29	15.25	4.96	1.44	15.1	3.76	13.4	12.9	20.69	7.79	1.88