Supplementary tables and figures

Greater pollination generalization is not associated with reduced constraints on corolla shape in Antillean plants

Simon Joly, François Lambert, Hermine Alexandre, Julien Clavel, Étienne Léveillé-Bourret, John L. Clark

Table S1: Pollinator information for the species included in the study.

Species	Pollinator	Confirmed	Reference
Gesneria acaulis	hummingbird	yes	Marten-Rodriguez et al. 2009
Gesneria sylvicola	unknown	no	
Gesneria aspera	hummingbird	yes	Marten-Rodriguez et al. 2009
Gesneria bracteosa	unknown	no	
Gesneria citrina	hummingbird	yes	Marten-Rodriguez et al. 2008
Gesneria clarensis	unknown	no	
Gesneria cubensis	hummingbird	yes	Marten-Rodriguez et al. 2010
Gesneria cuneifolia	hummingbird	yes	Marten-Rodriguez et al. 2008
Gesneria duchartreoides	unknown	no	
Gesneria ekmanii	unknown	no	
Gesneria ferruginae	hummingbird	no	
Gesneria fruticosa	bat	yes	Marten-Rodriguez et al. 2009
Gesneria glandulosa	hummingbird	no	
Gesneria harrisii	hummingbird	no	
Gesneria humilis	moth	yes	Marten-Rodriguez et al. 2015
Gesneria lopezii	hummingbird	no	
Gesneria neglecta	bat	no	
Gesneria nipensis	hummingbird	no	
Gesneria pauciflora	hummingbird	no	
Gesneria pedicellaris	hummingbird	yes	Marten-Rodriguez et al. 2009
Gesneria pedunculosa	bat	yes	Marten-Rodriguez et al. 2008
Gesneria pulverulenta	hummingbird	yes	Marten-Rodriguez et al. 2009
Gesneria purpurascens	hummingbird	yes	Marten-Rodriguez et al. 2015
Gesneria quisqueyana	bat	yes	Marten-Rodriguez et al. 2009
Gesneria reticulata	hummingbird	yes	Marten-Rodriguez et al. 2015
Gesneria salicifolia	hummingbird	no	
Gesneria scabra	hummingbird	no	
Gesneria depressa	unknown	no	
Gesneria sintenisii	mixed-pollination	yes	Marten-Rodriguez et al. 2008
Gesneria sp	unknown	no	
Gesneria ventricosa	hummingbird	yes	Marten-Rodriguez et al. 2009
Gesneria viridiflora subsp. viridiflora	mixed-pollination	yes	Marten-Rodriguez et al. 2015
Gesneria yamuriensis	hummingbird	no	
Rhytidophyllum auriculatum	mixed-pollination	yes	Marten-Rodriguez et al. 2009
Rhytidophyllum berteroanum	hummingbird	yes	Marten-Rodriguez et al. 2009
Rhytidophyllum bicolor	unknown	no	
Rhytidophyllum bullatum	hummingbird	no	
Rhytidophyllum crenulatum	mixed-pollination	yes	Marten-Rodriguez et al. 2010
Rhytidophyllum earlei	hummingbird	no	
Rhytidophyllum exsertum	mixed-pollination	yes	Marten-Rodriguez et al. 2010
Rhytidophyllum grandiflorum	mixed-pollination	yes	Marten-Rodriguez et al. 2009
Rhytidophyllum intermedium	unknown	no	
Rhytidophyllum leucomallon	mixed-pollination	yes	Marten-Rodriguez et al. 2009
Rhytidophyllum lomensis	hummingbird	no	
Rhytidophyllum minus	mixed-pollination	yes	Marten-Rodriguez et al. 2015
Rhytidophyllum rupincola	hummingbird	yes	Marten-Rodriguez et al. 2010
Rhytidophyllum sp	unknown	no	
Rhytidophyllum tomentosum	mixed-pollination	yes	Marten-Rodriguez et al. 2010
Rhytidophyllum vernicosum	mixed-pollination	yes	Marten-Rodriguez et al. 2009
Bellonia spinosa	bee	yes	Marten-Rodriguez et al. 2008

Table S2: Information on the flower pictures included in the study.

FileName	CodeSpecies	Voucher
GES_acaulis_APR72R1_13.jpg	GES_acaulis	no_voucher
GES_acaulis_G877_G940_G1238_1.jpg	GES_acaulis	LHBH G877
GES_acaulis_JLC_11303_02.jpg	GES_acaulis	JLC 11303
GES_bracteosa_JLC_10567_53.jpg	GES_bracteosa	JLC 10567
GES_citrina_G888_Dec_1965_1.jpg	GES_citrina	LHBH G888
GES_citrina_JLC_10021_07.jpg	GES_citrina	JLC 10021
GES_clarensis_JLC_10488_117.jpg	GES_clarensis	JLC 10488
GES_cuneifolia_APR_72R9_1.jpg	GES_cuneifolia	no_voucher
GES_cuneifolia_Dunn_1.jpg	GES_cuneifolia	no_voucher
GES_cuneifolia_G763_BH_1973_1.jpg	GES_cuneifolia	LHBH G763
GES_cuneifolia_G784_G857_1.jpg	GES_cuneifolia	LHBH
GES_cuneifolia_G857_Puerto_Rico_Tapley_1965_2.jpg	GES_cuneifolia	LHBH G857
GES_cuneifolia_G869_G857_G763_1.jpg	GES_cuneifolia	LHBH
GES_cuneifolia_G869_Puerto_Rico_1963_Tapley_10_5_BH_4.jpg	GES_cuneifolia	LHBH G869
GES_cuneifolia_july_1980_1.jpg	GES_cuneifolia	no_voucher
GES_duchartreoides_JLC_12791_067.jpg	GES_duchartreoides	JLC 12791
GES_ferruginae_JLC_10627_083.jpg	GES_ferruginae	JLC 10627
GES_fruticosa_Cornell_G1035_01.jpg	GES_fruticosa	LHBH G1035
GES_fruticosa_Skog_01.jpg	GES_fruticosa	no_voucher
GES_glandulosa_JLC_12772_023.jpg	GES_glandulosa	JLC 12772
GES_harrisii_Jamaica_Guaco_Rock_3.jpg	GES_harrisii	no_voucher
GES_harrisii_Tapley_1964.jpg	GES_harrisii	no_voucher
GES_heterochroa_JLC_12800_061.jpg	GES_heterochroa	JLC 12800
GES_humilis_G1365_M_Stone_2.jpg	GES_humilis	LHBH G1365
GES_humilis_JLC_10040_06.jpg	GES_humilis	JLC 10040
GES_humilis_JLC_10472_11.jpg	GES_humilis	JLC 10472
GES_humilis_JLC_10574_14.jpg	GES_humilis	JLC 10574
GES_humilis_JLC_10584_01.jpg	GES_humilis	JLC 10584
GES_humilis_JLC_10589_25.jpg	GES_humilis	JLC 10589
GES_humilis_JLC_10624_04.jpg	GES_humilis	JLC 10624
GES_humilis_JLC_10630_05.jpg	GES_humilis	JLC 10630
GES_humilis_JLC_10633_13.jpg	GES_humilis	JLC 10633
GES_humilis_JLC_10634_10.jpg	GES_humilis	JLC 10634
GES_lopezii_Suarez_Cuba__Mayari_25.jpg	GES_lopezii	no_voucher
GES_neglecta_Cornell_G875_01.jpg	GES_neglecta	LHBH G875
GES_nipensis_JLC_10577_30.jpg	GES_nipensis	JLC 10577
GES_nipensis_JLC_10578_05.jpg	GES_nipensis	JLC 10578
GES_pauciflora_G769_1.jpg	GES_pauciflora	LHBH G769
GES_pauciflora_Gesneria_lemondrop_3.jpg	GES_pauciflora	no_voucher
GES_pedicellaris_domrep_talpey_1.jpg	GES_pedicellaris	no_voucher
GES_pedicellaris_G898_G883_G1231_1.jpg	GES_pedicellaris	LHBH
GES_pedicellaris_JLC_10635_04.jpg	GES_pedicellaris	JLC 10635
GES_pedicellaris_JLC_11328_13.jpg	GES_pedicellaris	JLC 11328
GES_pedicellaris_pauciflora_sacatilis_1.jpg	GES_pedicellaris	no_voucher
GES_pedunculosa_USBRG_1997_204_1.jpg	GES_pedunculosa	USBRG
GES_pedunculosa_USBRG_96_342_1.jpg	GES_pedunculosa	USBRG
GES_pulverulenta_G1034_1.jpg	GES_pulverulenta	LHBH G1034
GES_purpurascens_JLC_10564_124.jpg	GES_purpurascens	JLC 10564
GES_purpurascens_JLC_12769_096.jpg	GES_purpurascens	JLC 12769
GES_quisqueyana_APR_72R9_11.jpg	GES_quisqueyana	no_voucher
GES_reticulata_dominicanrepublic_talpey_1972_1.jpg	GES_reticulata	no_voucher
GES_reticulata_G784_3.jpg	GES_reticulata	LHBH G784
GES_reticulata_USBRG_1997_205_2.jpg	GES_reticulata	USBRG
GES_salicifolia_JLC_10566_79.jpg	GES_salicifolia	JLC 10566

Table S2: Continued...

FileName	CodeSpecies	Voucher
GES_scabra_sphaerocarpa_G881_1.jpg	GES_scabra	LHBH G881
GES_scabra_sphaerocarpa_jamaica_talpey_1964_1.jpg	GES_scabra	no_voucher
GES_shaferi_JLC_12773_096.jpg	GES_depressa	JLC 12773
GES_shaferi_JLC_12786_012.jpg	GES_depressa	JLC 12786
GES_shaferi_JLC_12788_002.jpg	GES_depressa	JLC 12788
GES_ventricosa_dunn_4.jpg	GES_ventricosa	no_voucher
GES_ventricosa_G940_3.jpg	GES_ventricosa	LHBH G940
GES_ventricosa_JLC_6545_2.jpg	GES_ventricosa	JLC 6545
GES_viridiflora_JLC_10509_35.jpg	GES_viridiflora	JLC 10509
GES_viridiflora_JLC_10540_01.jpg	GES_viridiflora	JLC 10540
GES_viridiflora_JLC_10552_21.jpg	GES_viridiflora	JLC 10552
GES_viridiflora_JLC_10554_20.jpg	GES_viridiflora	JLC 10554
GES_viridiflora_JLC_10555_29.jpg	GES_viridiflora	JLC 10555
GES_viridiflora_JLC_12797_14.jpg	GES_viridiflora	JLC 12797
GES_yamuriensis_JLC_10575_01.jpg	GES_yamuriensis	JLC 10575
RHY_auriculatum_USBRG_97_113_1.jpg	RHY_auriculatum	USBRG
RHY_berteroanum_77_227_4.jpg	RHY_berteroanum	no_voucher
RHY_berteroanum_G1398_G1257_G841_1.jpg	RHY_berteroanum	LHBH
RHY_berteroanum_JUL81W5_16.jpg	RHY_berteroanum	no_voucher
RHY_crenulatum_JLC_10042_38.jpg	RHY_crenulatum	JLC 10042
RHY_crenulatum_JLC_10580_10.jpg	RHY_crenulatum	JLC 10580
RHY_crenulatum_JLC_10582_02.jpg	RHY_crenulatum	JLC 10582
RHY_crenulatum_JLC_12803_09.jpg	RHY_crenulatum	JLC 12803
RHY_earlei_JLC_10458_02.jpg	RHY_earlei	JLC 10458
RHY_earlei_JLC_10486_19.jpg	RHY_earlei	JLC 10486
RHY_exsertum_JLC_10508_12.jpg	RHY_exsertum	JLC 10508
RHY_exsertum_JLC_10538_07.jpg	RHY_exsertum	JLC 10538
RHY_exsertum_JLC_10546_07.jpg	RHY_exsertum	JLC 10546
RHY_exsertum_JLC_10551_03.jpg	RHY_exsertum	JLC 10551
RHY_exsertum_JLC_10565_08.jpg	RHY_exsertum	JLC 10565
RHY_exsertum_JLC_10569_05.jpg	RHY_exsertum	JLC 10569
RHY_exsertum_JLC_10579_01.jpg	RHY_exsertum	JLC 10579
RHY_exsertum_JLC_10585_18.jpg	RHY_exsertum	JLC 10585
RHY_exsertum_JLC_12770_23.jpg	RHY_exsertum	JLC 12770
RHY_exsertum_JLC_12787_14.jpg	RHY_exsertum	JLC 12787
RHY_grandiflorum_APR72r9_8.jpg	RHY_grandiflorum	no_voucher
RHY_grandiflorum_cornell_1.jpg	RHY_grandiflorum	no_voucher
RHY_intermedium_JLC_10547_10.jpg	RHY_intermedium	JLC 10547
RHY_leucomallon_G1232_1.jpg	RHY_leucomallon	LHBH G1232
RHY_lomensis_JLC_10469_23.jpg	RHY_lomense	JLC 10469
RHY_lomensis_JLC_10470_24.jpg	RHY_lomense	JLC 10470
RHY_lomensis_JLC_10471_01.jpg	RHY_lomense	JLC 10471
RHY_minus_JLC_10500_34.jpg	RHY_minus	JLC 10500
RHY_rupincola_JLC_11308_18.jpg	RHY_rupincola	JLC 11308
RHY_rupincola_JLC_11957_36.jpg	RHY_rupincola	JLC 11957
RHY_tomentosum_apr72r1_11.jpg	RHY_tomentosum	no_voucher
RHY_tomentosum_jlc_10477_06.jpg	RHY_tomentosum	JLC 10477
GES_aspera_2014-011.jpg	GES_aspera	Lambert 2014-011
GES_cubensis_2014-008.jpg	GES_cubensis	Lambert 2014-008
GES_viridiflora_acrochordonanthe_2014-028.jpg	GES_sylvicola	Lambert 2014-028
RHY_auriculatum_2014-014.jpg	RHY_auriculatum	Lambert 2014-014
RHY_auriculatum_2014-025.jpg	RHY_auriculatum	Lambert 2014-025
RHY_bicolor_2014-001.jpg	RHY_bicolor	Lambert 2014-001
RHY_bullatum_2014-016.jpg	RHY_bullatum	Lambert 2014-016

Table S2: Continued...

FileName	CodeSpecies	Voucher
RHY_ekmanii_2014-020.jpg	GES_ekmanii	Lambert 2014-020
RHY_ekmanii_2014-024.jpg	GES_ekmanii	Lambert 2014-024
RHY_nov.sp._2014-010.jpg	GES_sp	Lambert 2014-010
RHY_sp_2014-022.jpg	RHY_sp	Lambert 2014-022
RHY_bicolor_2014-002.jpg	RHY_bicolor	Lambert 2014-002
GES_cuneifolia_JBM.jpg	GES_cuneifolia	JBM
GES_pedicellaris_JBM.jpg	GES_pedicellaris	JBM 932-1971
GES_ventricosa_JBM.jpg	GES_ventricosa	Léveillé-Bourret G4
RHY_auriculatum_JBM.jpg	RHY_auriculatum	JBM 937-1971
RHY_exsertum_JBM.jpg	RHY_exsertum	Léveillé-Bourret G1
RHY_rupincola_JBM.jpg	RHY_rupincola	JBM 113-1991
RHY_tomentosum_JBM.jpg	RHY_tomentosum	Léveillé-Bourret G2
RHY_vernicosum_JBM.jpg	RHY_vernicosum	Léveillé-Bourret G3
GES_sintenisii_JLC_13757_19.jpg	GES_sintenisii	JLC 13757
GES_acrochordonanthe_JLC_14467_090.jpg	GES_sylvicola	JLC 14467
GES_acrochordonanthe_JLC_14522_045.jpg	GES_sylvicola	JLC 14522
GES_glandulosa_JLC_14572_026.jpg	GES_glandulosa	JLC 14572
RHY_auriculatum_JLC_14319_34.jpg	RHY_auriculatum	JLC 14319
RHY_auriculatum_JLC_14387_37.jpg	RHY_auriculatum	JLC 14387
RHY_auriculatum_JLC_14434_01.jpg	RHY_auriculatum	JLC 14434
RHY_auriculatum_JLC_14499_10.jpg	RHY_auriculatum	JLC 14499
RHY_auriculatum_JLC_14523_028.jpg	RHY_auriculatum	JLC 14523
RHY_bicolor_JLC_14321_109.jpg	RHY_bicolor	JLC 14321
RHY_bicolor_JLC_14364_05.jpg	RHY_bicolor	JLC 14364
RHY_bicolor_JLC_14493_07.jpg	RHY_bicolor	JLC 14493
RHY_leucomallon_JLC_14338_031.jpg	RHY_leucomallon	JLC 14338
RHY_leucomallon_JLC_14497_09.jpg	RHY_leucomallon	JLC 14497
RHY_leucomallon_JLC_14498_10.jpg	RHY_leucomallon	JLC 14498
RHY_nov.sp._JLC_14460_081.jpg	GES_sp	JLC 14460

Table S3: Voucher information for the specimens sequenced in the study.

Species	Collector	Collection number	Herbarium	CHI	F3H	GAPDH	gCYC	UF3GT
Bellonia spinosa	Clark, J.	10573	UNA	MF318806		MF318613	MF318728	
Bellonia spinosa	Leveille-Bourret, E.	G8	MT	MF318807	MF318654			MF318561
Gesneria acaulis	Clark, J.	11303	UNA	MF318829	MF318715	MF318646	MF318730	
Gesneria acaulis	Marten-Rodriguez, S.	1188	US				GU323229	
Gesneria aspera	Lambert, F	2014-011	MT	MF318849	MF318682		MF318731	
Gesneria bracteosa	Clark, J.	10567	UNA	MF318869	MF318705	MF318642	MF318732	MF318605
Gesneria christii	Clark, J.	10025	UNA	MF318838	MF318672		MF318734	
Gesneria christii	Leveille-Bourret, E.	G6	MT	MF318839	MF318673	MF318649	MF318735	MF318579
Gesneria christii	Smithsonian Institution living collection	94-507					AY363923	
Gesneria citrina	Clark, J.	10020	UNA		MF318679		MF318736	
Gesneria citrina	Marten-Rodriguez, S.	1248					GU323232	
Gesneria clarensis	Clark, J.	10488	UNA	MF318860	MF318674	MF318650	MF318737	MF318588
Gesneria cubensis	Lambert, F	2014-008	MT	MF318850	MF318714		MF318738	
Gesneria cubensis	Marten-Rodriguez, S.	1232	UNA				GU323234	
Gesneria cuneifolia	Marten-Rodriguez, S.	1247					GU323235	
Gesneria depressa	Clark, J.	13070	UNA		MF318681		MF318758	
Gesneria ekmanii	Lambert, F	2014-018	MT	MF318863	MF318718		MF318797	MF318597
Gesneria ekmanii	Lambert, F	2014-020	MT	MF318865	MF318719	MF318643	MF318741	MF318580
Gesneria ekmanii	Lambert, F	2014-024	MT	MF318864	MF318720		MF318742	
Gesneria ferruginae	Clark, J.	10627	UNA	MF318861		MF318651	MF318756	MF318589
Gesneria fruticosa	Lambert, F	2014-012	MT	MF318851	MF318711	MF318644	MF318743	MF318581
Gesneria fruticosa	Marten-Rodriguez, S.	1227	UNA				GU323238	
Gesneria humilis	Chautems, A.	1179					AY423156	
Gesneria humilis	Clark, J.	10040	UNA	MF318834	MF318699	MF318614	MF318744	MF318601
Gesneria humilis	Clark, J.	10472	UNA	MF318835	MF318700	MF318616	MF318745	MF318602
Gesneria humilis	Clark, J.	10574	UNA	MF318837			MF318746	
Gesneria humilis	Clark, J.	10626	UNA	MF318836	MF318684	MF318615	MF318747	MF318603
Gesneria nipensis	Clark, J.	10577	UNA		MF318710		MF318748	
Gesneria pedicellaris	Clark, J.	10635	UNA	MF318840	MF318675		MF318749	MF318612
Gesneria pedicellaris	Marten-Rodriguez, S.	1229	US				GU323241	
Gesneria pedunculosa	Clark, J.	10644	UNA	MF318852	MF318701		MF318750	MF318582
Gesneria pedunculosa	Marten-Rodriguez, S.	1251					GU323242	
Gesneria pulverulenta	Marten-Rodriguez, S.	1237	US				GU323243	
Gesneria pumila	Marten-Rodriguez, S.	1194	US				GU323244	
Gesneria purpurascens	Clark, J.	10564	UNA	MF318831	MF318716	MF318647	MF318751	MF318587
Gesneria quisqueyana	Marten-Rodriguez, S.	1230	US				GU323245	
Gesneria reticulata	Clark, J.	10558	UNA	MF318832	MF318680		MF318755	MF318598
Gesneria reticulata	Marten-Rodriguez, S.	1221	US				GU323246	

Table S3: Continued...

Species	Collector	Collection number	Herbarium	CHI	F3H	GAPDH	gCYC	UF3GT
Gesneria salicifolia	Clark, J.	10566	UNA	MF318862	MF318676	MF318645	MF318757	
Gesneria sintenisii	Clark, J.	13757	UNA	MF318841	MF318708		MF318759	MF318611
Gesneria sintenisii	Marten-Rodriguez, S.	1252	US				GU323250	MF352012
Gesneria sylvicola	Lambert, F	2014-027	MT	MF318842	MF352013		MF318764	MF352011
Gesneria sylvicola	Lambert, F	2014-028	MT	MF318843	MF318722		MF318765	MF318585
Gesneria ventricosa	Clark, J.	6545	UNA		MF318677	MF318617	MF318761	
Gesneria ventricosa	Leveille-Bourret, E.	G4	MT	MF318853	MF318712	MF318640	MF318762	MF318583
Gesneria ventricosa	Marten-Rodriguez, S.	1112A					GU323249	
Gesneria viridiflora	Clark, J.	10041	UNA	MF318845			MF318766	MF318610
Gesneria viridiflora	Clark, J.	10509	UNA	MF318854	MF318726		MF318767	
Gesneria viridiflora	Clark, J.	10524	UNA		MF318706		MF318768	MF318584
Gesneria viridiflora	Clark, J.	10540	UNA		MF318709		MF318769	MF318609
Gesneria viridiflora	Clark, J.	10561	UNA	MF318866	MF318725		MF318770	MF318586
Gesneria yamuriensis	Clark, J.	10575	UNA	MF318830	MF318717	MF318648	MF318771	MF318599
Henckelia malayana	Leveille-Bourret, E.	G11	MT	MF318867	MF318723		MF318772	
Kohleria trinidad	Joly, S.	1102	MT	MF318868			MF318773	
Rhytidophyllum auriculatum	Joly, S.	1100	MT		MF318658	MF318641	MF318777	MF318564
Rhytidophyllum auriculatum	Lambert, F	2014-014	MT	MF318824	MF318687	MF318635	MF318775	MF318565
Rhytidophyllum auriculatum	Lambert, F	2014-025	MT		MF318668		MF318776	MF318573
Rhytidophyllum auriculatum	Marten-Rodriguez, S.	1222	US				GU323253	
Rhytidophyllum berteroanum	Marten-Rodriguez, S.	1226	US				GU323254	
Rhytidophyllum bicolor	Lambert, F	2014-001	MT	MF318858	MF318697	MF318621	MF318778	MF318593
Rhytidophyllum bicolor	Lambert, F	2014-002	MT	MF318859	MF318698	MF318623	MF318779	MF318594
Rhytidophyllum bullatum	Lambert, F	2014-016	MT	MF318847	MF318670		MF318780	MF318574
Rhytidophyllum crenulatum	Clark, J.	9531	UNA	MF318848	MF318659	MF318630	MF318781	MF318576
Rhytidophyllum crenulatum	Clark, John L.	10580	UNA				GU323255	
Rhytidophyllum earlei	Clark, J.	10458	UNA	MF318818	MF318686	MF318624	MF318739	MF318563
Rhytidophyllum earlei	Clark, J.	10486	UNA	MF318820	MF318689	MF318625	MF318740	MF318595
Rhytidophyllum exsertum	Clark, J.	10038	UNA	MF318810	MF318660	MF318633	MF318782	MF318566
Rhytidophyllum exsertum	Clark, J.	10585	UNA	MF318809	MF318713		séquencé	
Rhytidophyllum exsertum	Leveille-Bourret, E.	G1	MT	MF318812	MF318661	MF318637	MF318783	MF318568
Rhytidophyllum exsertum	Skog, L.	1197-14					GU323256	
Rhytidophyllum grandiflorum	Marten-Rodriguez, S.	1224	US				GU323257	
Rhytidophyllum intermedium	Clark, J.	10549	UNA	MF318816	MF318721	MF318629	MF318784	MF318569
Rhytidophyllum leucomallon	Acevedo, P.	13966					GU323258	
Rhytidophyllum lomense	Clark, J.	10466	UNA	MF318821	MF318691	MF318626	MF318785	
Rhytidophyllum lomense	Clark, J.	10469	UNA	MF318823	MF318692	MF318628	MF318786	MF318572
Rhytidophyllum minus	Clark, J.	10500	UNA	MF318815	MF318666		MF318787	MF318577

Table S3: Continued...

Species	Collector	Collection number	Herbarium	CHI	F3H	GAPDH	gCYC	UF3GT
Rhytidophyllum onacaensis	E. Carbono	9085	UNA	MF318826	MF318678	MF318618	MF318788	MF318575
Rhytidophyllum rupincola	Clark, J.	11261	UNA	MF318822	MF318690	MF318627	MF318790	
Rhytidophyllum rupincola	Clark, J.	11957	UNA	MF318819	MF318685	MF318634	MF318791	
Rhytidophyllum rupincola	Leveille-Bourret, E.	G5	MT		MF318693	MF318636	MF318792	MF318596
Rhytidophyllum rupincola	Marten-Rodriguez, S.	1253					GU323247	
Rhytidophyllum sp.	Lambert, F	2014-017	MT	MF318828	MF318669		MF318796	
Rhytidophyllum sp.	Lambert, F	2014-022	MT	MF318825	MF318671		MF318798	
Rhytidophyllum sp. nov 1	Lambert, F	2014-009	MT	MF318856	MF318695	MF318620	MF318794	MF318591
Rhytidophyllum sp. nov 1	Lambert, F	2014-010	MT	MF318857	MF318696	MF318622	MF318795	MF318592
Rhytidophyllum sp. nov 1	no voucher	2014-007		MF318855	MF318694	MF318619	MF318793	MF318590
Rhytidophyllum tomentosum	Leveille-Bourret, E.	G2	MT	MF318817	MF318663	MF318638	MF318799	MF318570
Rhytidophyllum tomentosum	Marten-Rodriguez, S.	1191	US				GU323260	
Rhytidophyllum tomentosum	Smithsonian Institution living collection	SI77-235					AY363926	
Rhytidophyllum vernicosum	Leveille-Bourret, E.	G3	MT	MF318844	MF318724	MF318652	MF318800	MF318604
Rhytidophyllum vernicosum	Marten-Rodriguez, S.	1246	US				GU323261	

Table S4: Primer information for the gene amplification.

Gene	Primers	Sequence (5' → 3')	Annealing temperature
CYCLOIDEA	gCYCf2	AAGGAGCTGGTGCAGGCTAAGA	54°C
	gCYCr2	GGGAGATTGCAGTTCAAATCCCTTGA	
GAPDH	GAPDHx1fb	TGCACTACTAACTGCCTTG	47°C
	GAPDHx4rb	GCTGGAAGMACTTTGCCAACAGC	
CHI	CHI1F	TCTGCATCGCTGTAGGTTCC	59°C
	CHI1R	GACATGTCTTGCCACCCAACT	
UF3GT	UF3GT1F	TGCCAAAATCCACCGCTGTGT	51°C
	UF3GT1R	TGCAACTGAGGTGCCCAGGA	
F3H	F3H2f	ACGGAGGCCTACAGCGAGCA	56°C
	F3H2R	CCTGCAACCCACCCACCTGA	

Note: PCR reactions included 1 × buffer, 1 mM $MgSO_4$, 1 U DreamTaq (Thermoscientific), 0.4 μM of each primer, 0.2 μM of each dNTPs, 1% PVP (M.W. 40,000), 50 μg BSA and ca. 30 ng of DNA.

Table S5: Number of transitions between the different pollination strategies according to the stochastic mapping when performed on species with confirmed and inferred pollination strategies. The median values obtained from the character simulations over the posterior distribution of species tree is reported as well as 95% credible intervals. Ancestral state are in rows.

	bat	bee	hummingbird	mixed-pollination	moth
bat	–	0.25 [0.19, 0.22]	3.74 [3.07, 4.40]	3.70 [3.06, 4.30]	0.22 [0.14, 0.34]
bee	0.06 [0.02, 0.10]	–	0.05 [0.02, 0.10]	0.08 [0.02, 0.14]	0.03 [0.02, 0.05]
hummingbird	3.32 [2.55, 3.88]	0.43 [0.37, 0.51]	–	2.48 [2.00, 2.96]	0.63 [0.44, 0.78]
mixed-pollination	4.47 [3.82, 5.17]	0.28 [0.20, 0.37]	6.53 [5.54, 7.15]	–	0.25 [0.14, 0.33]
moth	0.03 [0.02, 0.11]	0.06 [0.04, 0.10]	0.04 [0.01, 0.07]	0.04 [0.02, 0.07]	–

Table S6: Parameter values of the univariate evolutionary models fitted on the first three principal components of the morphospace when species with confirmed and inferred pollinators were included in the analyses. Mean values from the posterior distribution of species trees are given for the AICc weights, whereas median values are given for the parameter estimates. Numbers in brackets indicate the 25% and the 75% quantiles. The best model for each component is in bold. The θ parameter indicate the global or regime means for the BM-type and OUBM-type models, whereas it indicates the stationary optimum trait for the OU-type models. $station_{hum}$ and $station_{mix}$ are the stationary distributions of the hummingbird and mixed-pollination strategies.

PC1

Models	p	AICc weight	θ_{hum}	θ_{mix}	σ^2_{hum}	σ^2_{mix}	$station_{hum}$	$station_{mix}$
BM1	2	0 [0,0]	0.042 [0.033,0.05]	0.042 [0.033,0.05]	0.105 [0.077,0.163]	0.105 [0.077,0.163]	–	–
BMV	3	0 [0,0]	0.097 [0.033,0.137]	0.097 [0.033,0.137]	0.028 [0.016,0.13]	0.151 [0.059,0.285]	–	–
BM1m	**3**	**0.38 [0.03,0.69]**	**0.154 [0.148,0.162]**	**-0.129 [-0.139,-0.118]**	**0.015 [0.012,0.019]**	**0.015 [0.012,0.019]**	–	–
BMVm	4	0.16 [0.03,0.24]	0.153 [0.143,0.16]	-0.132 [-0.142,-0.122]	0.019 [0.013,0.025]	0.011 [0.009,0.014]	–	–
OU1	3	0 [0,0]	0.031 [0.021,0.042]	0.031 [0.021,0.042]	0.207 [0.137,0.477]	0.207 [0.137,0.477]	0.033 [0.031,0.034]	0.033 [0.031,0.034]
OUM	4	0.46 [0.03,0.95]	0.169 [0.165,0.172]	-0.159 [-0.159,-0.158]	3.122 [0.916,17.092]	3.122 [0.916,17.092]	0.005 [0.005,0.005]	0.005 [0.005,0.005]
OUMV	5	0 [0,0]	0.214 [0.192,0.23]	-0.163 [-0.192,-0.075]	15.291 [4.636,43.424]	24.445 [10.766,50.789]	2.25 [1.027,5.547]	4.309 [1.556,7.299]
OUMA	5	0 [0,0]	0.218 [0.198,0.247]	-0.159 [-0.196,-0.08]	21.291 [12.123,39.902]	21.291 [12.123,39.902]	3.587 [2.64,4.543]	3.587 [2.64,4.543]
OUMVA	6	0 [0,0]	0.214 [0.19,0.231]	-0.162 [-0.195,-0.096]	17.889 [4.882,42.186]	24.258 [10.321,52.843]	2.414 [1.005,4.92]	4.403 [1.848,7.136]
OUBMi	4	0 [0,0]	0.123 [0.096,0.146]	0.123 [0.096,0.146]	1.797 [0.063,43.782]	0.038 [0.018,0.119]	0.014 [0.007,0.017]	–
BMOUi	4	0 [0,0]	-0.053 [-0.074,-0.03]	-0.053 [-0.074,-0.03]	0.033 [0.021,0.066]	2.751 [0.442,33.744]	–	0.019 [0.013,0.023]
OUBM	3	0 [0,0]	0.15 [0.118,0.177]	0.15 [0.118,0.177]	0.171 [0.118,0.285]	0.171 [0.118,0.285]	0.005 [0.004,0.007]	–
BMOU	3	0 [0,0]	-0.091 [-0.119,-0.036]	-0.091 [-0.119,-0.036]	0.188 [0.122,0.336]	0.188 [0.122,0.336]	–	0.008 [0.006,0.011]

PC2

Models	p	AICc weight	θ_{hum}	θ_{mix}	σ^2_{hum}	σ^2_{mix}	$station_{hum}$	$station_{mix}$
BM1	2	0 [0,0]	-0.033 [-0.036,-0.03]	-0.033 [-0.036,-0.03]	0.021 [0.016,0.035]	0.021 [0.016,0.035]	–	–
BMV	3	0 [0,0]	-0.032 [-0.037,-0.027]	-0.032 [-0.037,-0.027]	0.029 [0.02,0.055]	0.009 [0.007,0.012]	–	–
BM1m	3	0 [0,0]	-0.018 [-0.024,-0.012]	-0.057 [-0.064,-0.051]	0.019 [0.014,0.033]	0.019 [0.014,0.033]	–	–
BMVm	4	0 [0,0]	-0.012 [-0.02,0]	-0.05 [-0.059,-0.039]	0.028 [0.019,0.052]	0.007 [0.005,0.009]	–	–
OU1	**3**	**0.53 [0.45,0.65]**	**-0.028 [-0.03,-0.026]**	**-0.028 [-0.03,-0.026]**	**0.223 [0.075,0.99]**	**0.223 [0.075,0.99]**	**0.003 [0.003,0.003]**	**0.003 [0.003,0.003]**
OUM	4	0.26 [0.23,0.32]	-0.04 [-0.043,-0.034]	-0.017 [-0.019,-0.014]	0.169 [0.075,0.662]	0.169 [0.075,0.662]	0.003 [0.003,0.003]	0.003 [0.003,0.003]
OUMV	5	0.05 [0.01,0.07]	-0.049 [-0.055,-0.038]	-0.02 [-0.027,-0.012]	9.117 [5.89,13.777]	3.756 [2.774,5.29]	1.132 [0.884,1.613]	0.482 [0.408,0.568]
OUMA	5	0.02 [0,0.03]	-0.049 [-0.056,-0.039]	-0.016 [-0.026,-0.008]	6.422 [4.583,9.904]	6.422 [4.583,9.904]	0.796 [0.7,0.974]	0.796 [0.7,0.974]
OUMVA	6	0.01 [0,0.02]	-0.049 [-0.056,-0.038]	-0.02 [-0.028,-0.012]	9.189 [5.72,13.364]	3.717 [2.825,5.463]	1.117 [0.865,1.458]	0.486 [0.411,0.583]
OUBMi	4	0.1 [0.01,0.06]	-0.041 [-0.047,-0.035]	-0.041 [-0.047,-0.035]	0.289 [0.11,1.407]	0.006 [0.004,0.009]	0.003 [0.003,0.003]	–
BMOUi	4	0.01 [0,0]	-0.023 [-0.033,-0.017]	-0.023 [-0.033,-0.017]	0.028 [0.019,0.049]	0.045 [0.023,0.225]	–	0.002 [0.002,0.002]
OUBM	3	0 [0,0]	-0.045 [-0.051,-0.037]	-0.045 [-0.051,-0.037]	0.032 [0.021,0.05]	0.032 [0.021,0.05]	0.003 [0.003,0.004]	–
BMOU	3	0 [0,0]	-0.024 [-0.033,-0.017]	-0.024 [-0.033,-0.017]	0.03 [0.021,0.051]	0.03 [0.021,0.051]	–	0.002 [0.002,0.002]

PC3

Models	p	AICc weight	θ_{hum}	θ_{mix}	σ^2_{hum}	σ^2_{mix}	$station_{hum}$	$station_{mix}$
BM1	2	0.02 [0,0.03]	0.018 [0.015,0.019]	0.018 [0.015,0.019]	0.004 [0.004,0.005]	0.004 [0.004,0.005]	–	–
BMV	3	0.01 [0,0.01]	0.017 [0.015,0.019]	0.017 [0.015,0.019]	0.005 [0.005,0.007]	0.003 [0.003,0.005]	–	–
BM1m	3	0.12 [0.03,0.16]	0.031 [0.028,0.034]	-0.004 [-0.009,-0.001]	0.004 [0.003,0.004]	0.004 [0.003,0.004]	–	–
BMVm	4	0.05 [0.02,0.08]	0.035 [0.03,0.039]	-0.001 [-0.004,0.003]	0.005 [0.004,0.006]	0.002 [0.002,0.003]	–	–
OU1	**3**	**0.3 [0.13,0.45]**	**0.015 [0.014,0.016]**	**0.015 [0.014,0.016]**	**0.019 [0.013,0.107]**	**0.019 [0.013,0.107]**	**0.002 [0.002,0.002]**	**0.002 [0.002,0.002]**
OUM	4	0.1 [0.03,0.15]	0.018 [0.016,0.021]	0.01 [0.009,0.013]	0.02 [0.013,0.209]	0.02 [0.013,0.209]	0.002 [0.001,0.002]	0.002 [0.001,0.002]
OUMV	5	0.12 [0.03,0.16]	0.022 [0.017,0.029]	0.01 [0.005,0.017]	2.865 [2.249,3.919]	0.854 [0.702,1.063]	0.449 [0.394,0.524]	0.146 [0.118,0.17]
OUMA	5	0.03 [0.01,0.04]	0.022 [0.016,0.026]	0.01 [0.005,0.018]	1.359 [1.089,1.744]	1.359 [1.089,1.744]	0.275 [0.249,0.301]	0.275 [0.249,0.301]
OUMVA	6	0.02 [0.01,0.03]	0.023 [0.019,0.029]	0.01 [0.006,0.017]	2.135 [1.616,2.726]	0.733 [0.569,0.944]	0.399 [0.348,0.467]	0.148 [0.118,0.177]
OUBMi	4	0.01 [0,0.01]	0.017 [0.014,0.02]	0.017 [0.014,0.02]	0.015 [0.01,0.027]	0.003 [0.002,0.004]	0.002 [0.002,0.003]	–
BMOUi	4	0.13 [0.02,0.16]	0.016 [0.014,0.017]	0.016 [0.014,0.017]	0.004 [0.004,0.005]	0.048 [0.02,0.229]	–	0.001 [0.001,0.001]
OUBM	3	0.01 [0,0.01]	0.018 [0.015,0.021]	0.018 [0.015,0.021]	0.005 [0.004,0.007]	0.005 [0.004,0.007]	0.003 [0.002,0.007]	–
BMOU	3	0.08 [0.01,0.1]	0.015 [0.012,0.017]	0.015 [0.012,0.017]	0.006 [0.006,0.008]	0.006 [0.006,0.008]	–	0.001 [0.001,0.001]

Table S7: Matrix of stationary variance estimates obtained with the OUM multivariate model, averaged over the posterior distribution of species trees with only species with confirmed pollination strategies. Median values are reported and numbers in brackets indicate the 25% and the 75% quantiles.

	PC1	PC2	PC3
PC1	0.0058 [0.0055, 0.0062]		
PC2	0.00063 [0.00053, 0.00081]	0.0029 [0.0029, 0.0030]	
PC3	-0.0010 [-0.0013, -0.00070]	-0.00058 [-0.00064, -0.00053]	0.0020 [0.0018, 0.0022]

Table S8: Model performance with the multivariate evolutionary models fitted on the first three principal components of the morphospace when all species were included in the analyses, including those with inferred pollinator strategies. The mean values obtained from the posterior distribution of species trees are given; numbers in brackets indicate the 25% and the 75% quantiles. The best model is in bold.

models	logLik	param	AICc weight
BM1	108.11 [98.93,120.48]	9	0 [0,0]
BMV	119.69 [112.64,128.69]	15	0 [0,0]
BM1m	140.93 [133.11,152.03]	12	0 [0,0.01]
BMVm	147.9 [140.66,156.66]	18	0 [0,0]
OU1	136.62 [132.59,140.57]	15	0 [0,0]
OUM	**164.32 [162.02,166.75]**	**18**	**1 [0.99,1]**
OUBM	123.15 [117.04,131.4]	15	0 [0,0]
BMOU	121.65 [115.22,130.89]	15	0 [0,0]
OUBMr	142.66 [140.17,146.98]	21	0 [0,0]
BMOUr	130.75 [123.82,139.6]	21	0 [0,0]

Table S9: Model parameters for the multivariate OUM model, which was the model that received the highest $AICc$ weight (Table S8), when all species are included in the analysis. The mean values obtained from the posterior distribution of species trees are given; numbers in brackets indicate the 25% and the 75% quantiles.

parameters	PC1	PC2	PC3
θ_{hum}	0.173 [0.169,0.177]	-0.042 [-0.052,-0.037]	0.015 [0.008,0.019]
θ_{mix}	-0.16 [-0.162,-0.158]	-0.017 [-0.018,-0.014]	0.011 [0.009,0.016]
σ^2	3.132 [0.987,10.306]	0.7 [0.232,2.32]	0.091 [0.018,0.372]
phylogenetic half-life	0.001 [0,0.003]	0.013 [0.004,0.039]	0.122 [0.079,0.21]
stationary variance	0.004 [0.004,0.005]	0.003 [0,0]	0.001 [-0.001,0]

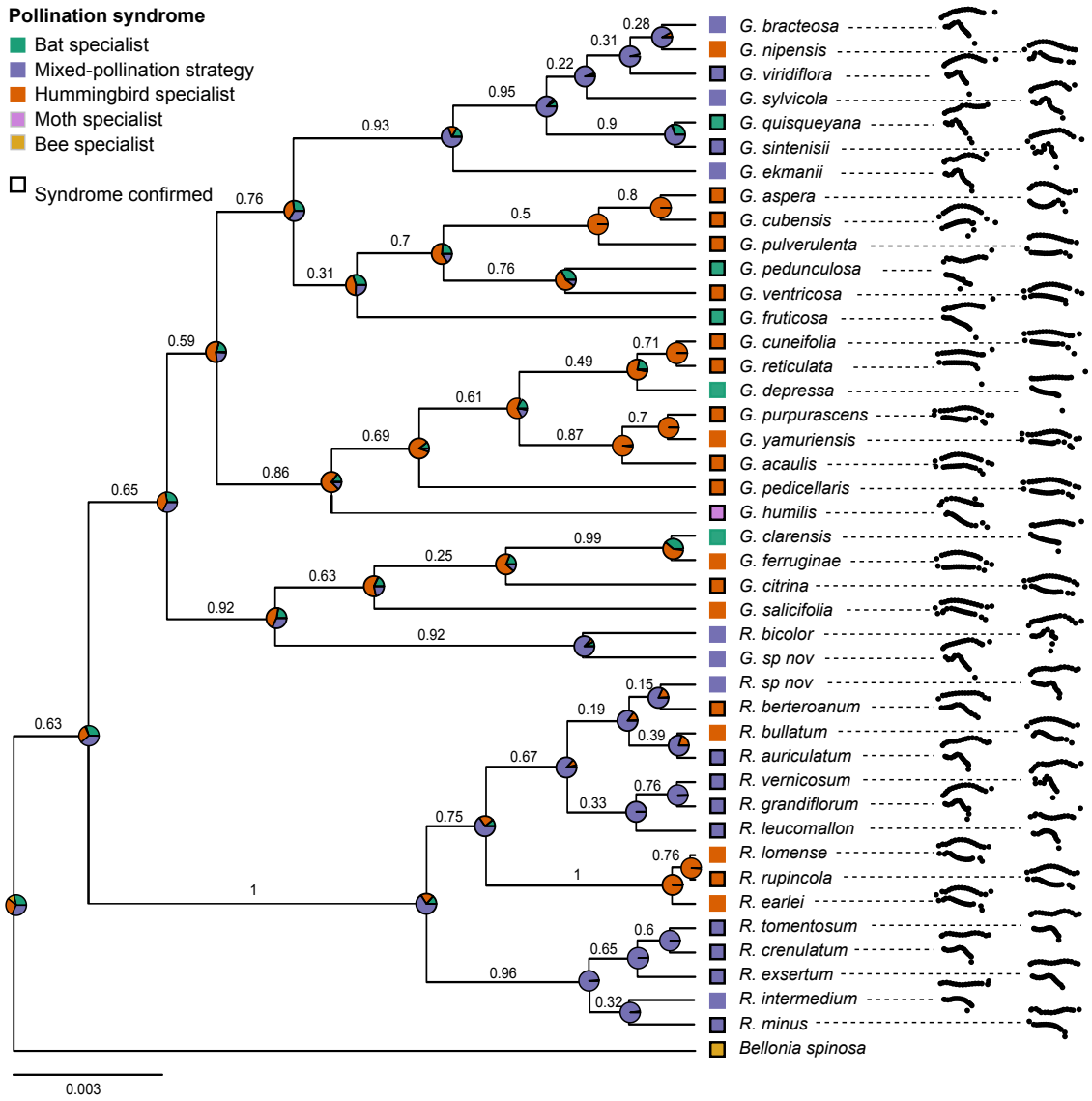

Figure S1: Species phylogeny showing mean corolla shapes (after Procrustes analysis). Pollination strategies are shown with those that have been confirmed indicated by a black contour. Pie charts represent the joint probability of each state at nodes as estimated by stochastic mapping from all species, that is including species with inferred pollinators. Clade posterior probabilities are shown above branches. Outgroup taxa are not shown.

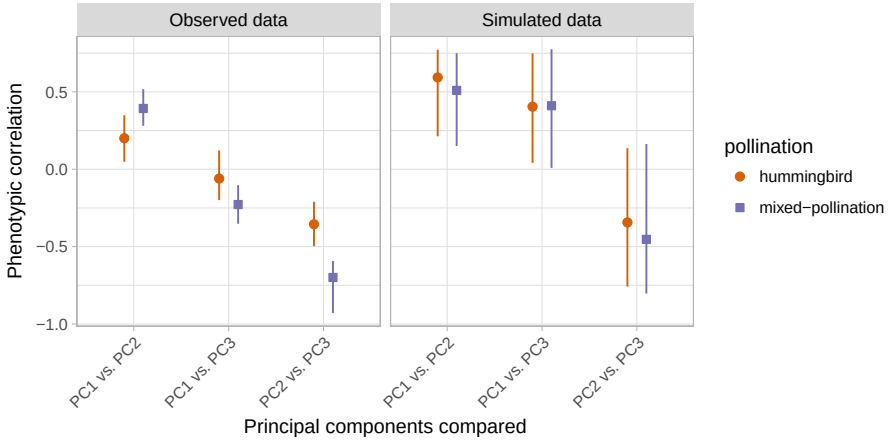

Figure S2: Graphical representation of the evolutionary trait correlations (from standardized evolutionary rates matrices) obtained with the BMVm multivariate model when all species were included in the analysis, for the observed data (left panel) and for data simulated under the best fitting model (OUM; right panel). Symbols represent the median correlation and the lines the 25% and 75% quantiles for both hummingbirds and mixed-pollination strategies. No artifactual differences are detected between the two groups when fitting models on traits simulated with the OUM model and thus with a common evolutionary covariance (right panel, see text).