

Table S1. Pairwise comparisons of forewing allometric slopes – Difference in vector lengths (DL). The upper triangle shows Z-effect sizes for pairwise comparisons of slope vector, the lower triangle shows corresponding p-values from 10.000 RRPP permutations. Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	—	0.3238	1.0179	-0.6186	-0.6481	-0.0622	1.7731	0.0766	-0.9970	-1.4108
bru	0.3478	—	0.7978	0.4592	-1.2791	0.1975	0.6764	0.1027	0.4692	0.2201
can	0.1352	0.2056	—	1.0970	1.1279	0.9341	0.1373	0.8835	1.1043	0.9704
coe	0.7313	0.3163	0.1224	—	-0.4714	-1.1665	1.6771	-1.0918	-0.2231	-0.7863
dep	0.7505	0.8865	0.1227	0.6918	—	-0.8143	-0.7985	-0.9395	-0.4993	-0.7883
gla	0.5330	0.4149	0.1554	0.8729	0.8003	—	1.5994	-2.0060	0.2692	-0.1794
jul	0.0355	0.6764	0.4493	0.0473	0.7841	0.0521	—	1.5341	1.8960	1.7010
pru	0.4800	0.4538	0.1636	0.8584	0.8366	0.9769	0.0603	—	0.3900	-0.0472
sab	0.8364	0.2992	0.1209	0.5989	0.7014	0.4043	0.0270	0.3591	—	-0.7008
tri	0.9157	0.3937	0.1483	0.7799	0.7977	0.5791	0.0417	0.5297	0.7561	—

Table S2. Pairwise comparisons of forewing allometric slopes – Distances between slope vectors (dist). The upper triangle shows Z-effect sizes for pairwise Euclidean distances between slope vectors. The lower triangle shows corresponding p-values (10.000 RRPP permutations). Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	—	0.7809	0.9781	-0.4495	-0.6423	0.8860	1.9200	-0.4721	-0.3003	-1.0924
bru	0.2181	—	1.1666	0.0160	-0.2631	-0.1440	0.2912	0.9253	0.2771	0.8105
can	0.1584	0.1213	—	1.2643	0.0602	1.3530	1.0353	1.2520	0.7181	1.0342
coe	0.6721	0.4921	0.1001	—	-0.1122	-0.7912	1.8251	-0.9928	-0.1825	-0.6352
dep	0.7370	0.6021	0.4722	0.5405	—	-0.2053	-1.1982	0.0967	-0.9831	-0.1314
gla	0.1950	0.5521	0.0885	0.7803	0.5810	—	1.8912	0.4412	0.2901	0.6308
jul	0.0294	0.3832	0.1483	0.0345	0.8806	0.0301	—	2.7331	1.5052	2.2773
pru	0.6774	0.1792	0.1033	0.8370	0.4582	0.3320	0.0052	—	0.5046	-1.2240
sab	0.6149	0.3843	0.2271	0.5732	0.8327	0.3850	0.0701	0.3049	—	0.0243
tri	0.8618	0.2083	0.1441	0.7362	0.5501	0.2650	0.0102	0.8886	0.4892	—

Table S3. Pairwise comparisons of forewing allometric slopes – Vector correlations (VC) and angles. The upper triangle shows Z-effect sizes for pairwise correlations between slope vectors, reflecting the orientation of allometric trajectories. The lower triangle shows corresponding p-values from 10.000 RRPP permutations. Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	—	1.7653	-0.2248	-0.1790	0.3189	1.5110	0.9814	-0.9895	0.0782	-1.3380
bru	0.0358	—	0.7812	-0.1960	0.2232	-0.7943	-1.0480	1.6053	0.2160	1.6388
can	0.5851	0.2313	—	1.4669	-0.8760	1.4406	-0.4268	0.8345	-1.5049	-0.0404
coe	0.5693	0.5711	0.0723	—	1.7073	-0.8669	1.6364	-1.1986	0.5580	-0.5767
dep	0.3814	0.4218	0.7967	0.0429	—	0.9377	-1.7489	1.6665	-0.2968	1.5683
gla	0.0652	0.7734	0.0771	0.7942	0.1857	—	0.7441	0.0599	0.5715	0.6189
jul	0.1774	0.8457	0.6605	0.0511	0.9595	0.2403	—	2.7331	0.1351	2.2264
pru	0.8276	0.0534	0.2158	0.8790	0.0467	0.4783	0.0005	—	0.6838	-1.7902
sab	0.4709	0.4244	0.9313	0.2992	0.6073	0.2951	0.5572	0.2624	—	0.3083
tri	0.9012	0.0494	0.5215	0.7095	0.0585	0.2807	0.0091	0.9623	0.3869	—

Table S4. Pairwise comparisons of hindwing allometric slopes – Difference in vector lengths (DL). The upper triangle shows Z-effect sizes for pairwise comparisons of slope vector, the lower triangle shows corresponding p-values from 10.000 RRPP permutations. Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	-	-0.0154	1.1114	-2.1113	-0.6505	-0.3312	1.0285	-0.6190	0.0219	-0.0092
bru	0.5168	-	1.0156	-0.0100	-0.7822	-2.2457	0.2474	-0.4957	0.8176	0.7059
can	0.1303	0.1501	-	1.2996	0.8782	1.1647	0.6826	1.0452	1.4311	1.3342
coe	0.9813	0.5187	0.0940	-	-0.2974	-0.1822	0.9692	-0.7381	-0.1122	-0.2979
dep	0.7484	0.7893	0.1937	0.6232	-	-0.5227	-1.4784	-0.7570	-0.1240	-0.2793
gla	0.6282	0.9892	0.1194	0.5779	0.7048	-	0.0812	-0.7590	0.5225	0.3497
jul	0.1632	0.4200	0.2470	0.1719	0.9229	0.4758	-	0.8054	1.6049	1.5102
pru	0.7270	0.6840	0.1445	0.7648	0.7877	0.7698	0.2200	-	0.4980	0.4394
sab	0.4970	0.2156	0.0747	0.5482	0.5507	0.3129	0.0502	0.3217	-	-1.5081
tri	0.5090	0.2540	0.0874	0.6228	0.6077	0.3778	0.0614	0.3425	0.9287	-

Table S5. Pairwise comparisons of hindwing allometric slopes – Distances between slope vectors (dist). The upper triangle shows Z-effect sizes for pairwise Euclidean distances between slope vectors. The lower triangle shows corresponding p-values (10.000 RRPP permutations). Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	-	0.5622	1.0989	0.5879	-0.1662	-0.1168	0.5351	-1.0169	0.1961	-1.0057
bru	0.2999	-	0.8901	0.4498	-0.2298	0.0834	1.5617	0.9645	-0.3221	-0.0605
can	0.1417	0.1975	-	1.2494	0.7239	0.4362	1.6735	1.3064	1.0267	1.0076
coe	0.2887	0.3388	0.1116	-	-1.2622	0.1664	0.9212	0.6427	-1.5259	0.1288
dep	0.5598	0.5843	0.2481	0.8918	-	-0.4943	-0.1522	0.0037	-0.8888	-0.2936
gla	0.5473	0.4676	0.3351	0.4320	0.6776	-	0.0812	0.4862	-0.5993	-0.2543
jul	0.3072	0.0610	0.0480	0.1869	0.5577	0.1589	-	0.3896	0.1277	0.1967
pru	0.8335	0.1763	0.0986	0.2677	0.4960	0.3262	0.3896	-	0.3331	0.5177
sab	0.4222	0.6161	0.1576	0.9371	0.8044	0.7120	0.1277	0.3331	-	0.6815
tri	0.8338	0.5239	0.1637	0.4540	0.6063	0.5930	0.1967	0.5177	0.6815	-

Table S6. Pairwise comparisons of hindwing allometric slopes – Vector correlations (VC) and angles. The upper triangle shows Z-effect sizes for pairwise correlations between slope vectors, reflecting the orientation of allometric trajectories. The lower triangle shows corresponding p-values from 10.000 RRPP permutations. Bold values highlight statistically significant p-values. Species abbreviations: alb (*albistylum*), bru (*brunneum*), can (*cancellatum*), coe (*coerulescens*), dep (*depressa*), gla (*glaucum*), jul (*julia*), pru (*pruinsum*), sab (*sabina*), tri (*trinacria*).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	-	0.3110	-0.1325	1.5407	0.9857	-0.1501	-0.7206	-1.3025	1.2255	-0.8371
bru	0.3919	-	-0.5464	0.7551	0.4540	-0.0867	1.0175	0.7844	-0.3564	-0.1909
can	0.5487	0.6865	-	0.7832	0.3770	-1.4351	1.1992	0.5274	-0.2225	-0.4866
coe	0.0649	0.2503	0.2419	-	-0.9607	0.7862	0.4894	1.2636	-0.6253	1.7864
dep	0.1803	0.3471	0.3800	0.8127	-	0.1379	0.1006	1.1403	-0.2963	1.2981
gla	0.5544	0.5377	0.9169	0.2434	0.4561	-	0.5865	0.5738	-0.2548	0.0941
jul	0.7445	0.1756	0.1306	0.3353	0.4730	0.3022	-	-0.9707	1.2125	0.1199
pru	0.8934	0.2406	0.3210	0.1121	0.1419	0.3082	0.8145	-	1.3054	0.0096
sab	0.1226	0.6245	0.5813	0.7167	0.6079	0.5967	0.1259	0.1058	-	1.2891
tri	0.7837	0.5688	0.6722	0.0299	0.1069	0.4696	0.4626	0.5177	0.1085	-

Table S7. Loadings and magnitudes of all forewing landmarks along Principal Component 1 (PC1), indicating their contribution to overall shape variation.

LM	x	y	Magnitude
8	0.3946	0.2277	0.4556
9	0.3574	0.2105	0.4148
3	-0.3683	-0.1315	0.3911
7	0.2961	0.2106	0.3634
4	-0.2409	-0.1275	0.2726
6	0.1724	0.1364	0.2198
2	-0.1815	-0.0554	0.1897
10	0.1427	-0.0691	0.1585
15	-0.1456	-0.0519	0.1545
14	0.1143	-0.0915	0.1465
20	-0.1332	-0.0329	0.1372
16	-0.1285	-0.0121	0.1291
19	-0.1073	-0.0329	0.1122
5	-0.0261	0.1091	0.1121
17	-0.1057	-0.0073	0.1059
18	-0.0986	-0.0271	0.1022
12	0.0198	-0.1001	0.1020
13	0.0182	-0.0714	0.0737
11	0.0572	-0.0383	0.0688
1	-0.0370	-0.0453	0.0585

Table S8. Loadings and magnitudes of all forewing landmarks along Principal Component 2 (PC2), indicating their contribution to overall shape variation.

LM	x	y	Magnitude
7	-0.2902	0.3114	0.4251
9	-0.2176	0.3270	0.3890
8	-0.1333	0.3167	0.3438
3	-0.0416	-0.3072	0.3105
4	-0.0024	-0.2694	0.2694
2	0.0969	-0.2076	0.2313
10	0.0674	0.2163	0.2266
6	-0.1441	0.1446	0.2039
15	0.1039	-0.1467	0.1966
14	0.1023	0.1645	0.1931
20	0.1135	-0.1069	0.1557
18	0.1494	-0.0344	0.1534
16	0.0946	-0.1034	0.1405
11	-0.1380	-0.0140	0.1387
12	0.1293	-0.0137	0.1298
17	0.1055	-0.0731	0.1285
1	-0.0457	-0.1086	0.1189
19	0.0940	-0.0642	0.1132
5	-0.1014	-0.0427	0.1102
13	0.0575	0.0112	0.0586

Table S9. Loadings and magnitudes of all forewing landmarks along Principal Component 3 (PC3), indicating their contribution to overall shape variation.

LM	x	y	Magnitude
11	0.3089	0.1946	0.3643
5	0.3098	0.1527	0.3475
7	-0.2424	0.1943	0.3107
6	0.2632	0.1249	0.2914
8	-0.2676	0.0091	0.2678
4	0.2669	-0.0214	0.2677
1	0.1949	0.1673	0.2561
18	-0.2264	-0.1039	0.2496
17	-0.2242	-0.0908	0.2419
19	-0.2182	-0.0937	0.2372
15	-0.1951	-0.0823	0.2120
2	-0.1650	-0.1077	0.1992
16	-0.1656	-0.0726	0.1816
3	0.1302	-0.1171	0.1749
9	-0.0198	-0.0999	0.1015
13	0.1002	-0.0034	0.1003
10	0.0695	-0.0075	0.0698
14	0.0624	0.0159	0.0644
20	-0.0135	-0.0439	0.0461
12	0.0318	-0.0146	0.0351

Table S10. Loadings and magnitudes of all hindwing landmarks along Principal Component 1 (PC1), indicating their contribution to overall shape variation.

LM	x	y	Magnitude
11	0.2515	0.3284	0.4137
9	0.2077	0.3354	0.3945
10	0.2069	0.3210	0.3819
3	-0.2602	-0.2105	0.3347
12	0.2149	0.2349	0.3184
4	-0.1993	-0.1801	0.2686
8	0.0331	0.1858	0.1887
2	-0.0972	-0.1441	0.1738
7	0.0299	0.1685	0.1711
1	0.0157	-0.1410	0.1419
17	-0.0785	-0.1178	0.1416
14	0.0190	-0.1243	0.1258
5	-0.1124	-0.0374	0.1185
16	0.0451	-0.1083	0.1173
13	0.0277	-0.0993	0.1031
6	-0.1005	0.0057	0.1007
18	-0.0654	-0.0701	0.0959
15	0.0276	-0.0876	0.0918
22	-0.0556	-0.0718	0.0908
21	-0.0228	-0.0719	0.0754
20	-0.0363	-0.0644	0.0739
19	-0.0508	-0.0512	0.0721

Table S11. Loadings and magnitudes of all hindwing landmarks along Principal Component 2 (PC2), indicating their contribution to overall shape variation.

LM	x	y	Magnitude
11	0.3755	-0.2673	0.4608
9	0.3327	-0.1894	0.3829
10	0.3204	-0.2000	0.3780
12	0.2655	-0.2386	0.3569
3	-0.1493	0.2050	0.2536
4	-0.1262	0.1876	0.2261
2	-0.1767	0.0921	0.1992
17	-0.1514	0.0640	0.1643
5	0.0159	0.1631	0.1640
6	0.0374	0.1438	0.1487
14	-0.1461	-0.0017	0.1463
18	-0.1230	0.0388	0.1288
22	-0.1258	0.0233	0.1276
7	0.1242	-0.0246	0.1265
16	-0.1188	-0.0394	0.1253
1	-0.1035	0.0496	0.1149
8	0.1031	-0.0284	0.1067
21	-0.0996	0.0223	0.1019
15	-0.0899	-0.0143	0.0910
20	-0.0694	0.0136	0.0706
19	-0.0627	0.0157	0.0646
13	-0.0324	-0.0153	0.0359

Table S12. Pairwise comparisons among *Orthetrum* species groups based on Canonical Variate Analysis (CVA) of Procrustes-aligned forewing landmark configurations. Values in the upper triangular matrix represent Mahalanobis distances, whereas values in the lower triangular matrix indicate the corresponding p-values derived from a permutation test. Species abbreviations are as follows: alb (albistylum), bru (brunneum), can (cancellatum), coe (coerulescens), dep (depressa), gla (glaucum), jul (julia), pru (pruinsum), sab (sabina), tri (trinacria).

	alb	bru	can	coe	dep	gla	jul	pru	sab	tri
alb	-	6.0282	4.8909	7.8209	11.0237	6.6172	7.9244	5.8065	7.9071	8.0048
bru	0.0004	-	4.5211	6.0425	9.8483	6.4544	6.6432	5.9846	8.7778	8.5407
can	0.0089	0.0251	-	8.2787	9.8337	7.7013	8.7133	6.0595	9.0177	8.8682
coe	0.0001	0.0001	0.0001	-	10.1447	6.1897	7.2817	7.6531	9.0515	8.8803
dep	0.0001	0.0001	0.0001	0.0001	-	10.5641	12.2673	9.5077	13.4423	12.9135
gla	0.0002	0.0001	0.0001	0.0003	0.0001	-	5.1023	4.9396	6.0128	5.8569
jul	0.0001	0.0001	0.0001	0.0001	0.0001	0.0048	-	6.3086	6.0810	6.8663
pru	0.0008	0.0006	0.0001	0.0001	0.0001	0.0073	0.0001	-	6.6181	7.4944
sab	0.0001	0.0001	0.0001	0.0001	0.0001	0.0004	0.0002	0.0001	-	4.2833
tri	0.0001	0.0001	0.0001	0.0001	0.0001	0.0006	0.0001	0.0001	0.0406	-

Table S13. Pairwise comparisons among *Orthetrum* species groups based on Canonical Variate Analysis (CVA) of Procrustes-aligned hindwing landmark configurations. Values in the upper triangular matrix represent Mahalanobis distances, whereas values in the lower triangular matrix indicate the corresponding p-values derived from a permutation test. . Species abbreviations are as follows: alb (albistylum), bru (brunneum), can (cancellatum), coe (coerulescens), dep (depressa), gla (glaucum), jul (julia), pru (pruinsum), sab (sabina), tri (trinacria).

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