	DBW	Hl	Hw	Tl	Tw	Al	Aw	FWl	FWw	HWl	HWw	Wsp1	Wsp2
Hl	0.774												
Hw	0.957	0.837											
Tl	0.974	0.812	0.964										
Tw	0.954	0.705	0.924	0.922									
Al	0.939	0.772	0.910	0.919	0.897								
Aw	0.931	0.664	0.882	0.879	0.950	0.871							
FWl	0.929	0.809	0.909	0.934	0.845	0.929	0.817						
FWw	0.883	0.781	0.884	0.904	0.788	0.851	0.752	0.948					
HWl	0.885	0.782	0.863	0.892	0.795	0.885	0.762	0.974	0.933				
HWw	0.874	0.791	0.878	0.898	0.782	0.855	0.735	0.943	0.960	0.937			
Wsp1	0.943	0.805	0.918	0.941	0.874	0.943	0.845	0.993	0.927	0.964	0.928		
Wsp2	0.941	0.809	0.920	0.944	0.866	0.937	0.836	0.999	0.946	0.971	0.941	0.995	
Bl	0.964	0.820	0.949	0.966	0.915	0.980	0.881	0.947	0.889	0.904	0.889	0.957	0.955

Table 1. Bivariate correlations (Pearson's r) between the log-transformed values of all the variables analyzed in the study (species means), dry body weight (DBW) and the linear measurements. Abbreviations as detailed in the text. All the r values were statistically significant ($P<0.0001$). sample size, n= 2645 species.

Predictor		Forewing length (Log_{10}FWl)			Winspan 1 (Log_{10}Wsp1)			Wingspan 2 (Log_{10}Wsp2)		
Statistic	n	R^2_{adj}	Intercept	Slope	R^2_{adj}	Intercept	Slope	R^2_{adj}	Intercept	Slope
Lepidoptera (a)	2645	0.862	-2.0531	2.7273	0.889	-3.2110	2.9622	0.885	-3.0780	2.7929
Papilionoidea (a)	455	0.889	-1.4528	2.1377	0.783	-2.2098	2.2620	0.814	-2.2817	2.2.141
'Lycaenid +' (b)	279	0.837	-1.7200	2.3046	0.808	-2.3897	2.3543	0.852	-2.5564	2.3563
Pieridae	51	0.833	-2.5045	2.7670	0.791	-3.5195	2.9447	0.848	-3.4358	2.7920
Hesperiidae	92	0.840	-1.8796	2.6437	0.857	-2.8546	2.7911	0.861	-2.8441	2.6868
Papilionidae	33	0.843	-0.9333	1.8116	0.799	-1.1947	1.7327	0.854	-1.6353	1.8722
'Macromoths' (a)	1410	0.768	-1.6792	2.5238	0.823	-2.7409	2.7263	0.805	-2.7127	2.6278
Saturniidae	68	0.687	-0.6245	1.8173	0.732	-1.4170	1.9951	0.714	-1.4279	1.9180
Sphingidae	49	0.820	-0.6594	1.9972	0.866	-1.5290	2.1325	0.850	-1.5827	2.1172
Bombycoidea (a)	183	0.744	-0.2882	1.6549	0.781	-1.0789	1.5426	0.766	-1.0421	1.7581
Geometridae	247	0.845	-2.0004	2.5338	0.854	-2.7747	2.5996	0.863	-2.9401	2.5973
'Geometroid +' (a) (c)	313	0.862	-1.9742	2.5165	0.876	-2.7979	2.6170	0.880	-2.9074	2.5792
'Cossoid +' (a) (d)	44	0.935	-1.9707	3.0140	0.927	-2.9457	3.0140	0.943	-3.0987	3.0542
Noctuoidea	672	0.815	-1.7267	2.5883	0.846	-2.7855	2.7616	0.844	-2.7552	2.6741
'Noctuoid – part.' (a) (e)	256	0.800	-1.4587	2.4544	0.836	-2.5073	2.6295	0.832	-2.4980	2.5688
Nolidae	64	0.838	-2.4312	3.2233	0.892	-3.5395	3.2911	0.867	-3.5852	3.2437
Erebidae	352	0.845	-1.8445	2.6240	0.850	-2.8394	2.7938	0.865	-2.8279	2.6794
Tortricoidea (a)	113	0.825	-1.8850	2.5424	0.863	-2.8575	2.6588	0.849	-2.8627	2.6291
Pyraloidea	224	0.883	-2.3487	3.0105	0.880	-3.4269	3.1223	0.896	-3.4315	3.0497
Zygaenidae	41	0.747	-1.0889	1.8888	0.769	-1.9269	2.0617	0.770	-1.9058	2.0047
'Micromoths' (a)	485	0.865	-2.3269	2.8909	0.879	-3.3599	2.9684	0.885	-3.3441	2.9231
Gelechioidea (a)	180	0.883	-2.5107	3.0316	0.897	-3.5881	3.1024	0.898	-3.5359	3.0347
Gelechiidae	61	0.731	-2.4521	2.9660	0.764	-3.6789	3.1908	0.755	-3.4962	3.0075
'Yponomeutoid +' (a) (f)	53	0.941	-2.3971	2.9663	0.940	-3.3811	2.9793	0.947	-3.4108	2.9800

Table 2. Summary of the regression fitting results (sample size, adjusted R^2, intercept and slope) of the log_{10}-transformed values of dry body weight on forewing length (FWl) and Wingspan (estimated in two alternative ways, see text) for the whole sample of Lepidoptera and for selected subsets of these represented by at least 40 species (except for Papilionidae, n= 33). (a) Either one of the families included differs significantly from the others in the slope, intercept or both, or this cannot be tested due to small sample size, or the families combined do not represent a monophyletic group: (b) 'Lycaenid +'= Riodinodae + Lycaenidae + Nymphalidae, (c) 'Geometroid +'= Drepanoidea + Geometroidea, (d) 'Cossoid +'= Cossidae incl. Dudgeonidae + Brachodidae, (e) 'Noctuoid-part.'= Notodontidae + Noctuidae + Euteliidae, (f) 'Yponomeutoid +'= Yponomeutoidea + Gracillarioidea.

	m	n		m	n
Intercept= -0.8224 *	---	---	Intercept= -1.653 *	---	---
FWl, slope= 1.9595 ***	---	---	Wsp1, slope= 1.592 **	---	---
Gelechioidea	-1.688 ***	1.072 ***	Gelechioidea	-1.935 **	1.510 **
Zygaenoidea (part.) [b]	-1.720 **	1.544 ***	Geometroidea	-1.161 [a]	1.031 [a]
Pyralidae	-1.575 ***	1.130 ***	Gracillariioidea	-1.892 *	1.573 *
Tineidae	-1.729 ***	1.198 ***	Noctuoidea	-1.133 [a]	1.169 *
Other Lepidoptera	-1.077 **	0.651 **	Pyraloidea	-1.774 *	1.530 **
			Sesioidea	-1.444 [a]	1.472 *
			Tineoidea	-2.018 **	1.692 **
			Tortricoidea	-1.205 [a]	1.067 [a]
			Yponomeutoidea	-1.749 *	1.398 *
			Other Lepidoptera	-1.114 [a]	1.020 *
Model statistics (FWl)			Model statistics (Wsp1)		
R^2 adj. = 0.874 ***			R^2 adj. = 0.907 ***		
F, model [d.f.= 11, 2637] = 1668.38 ***			F, model [d.f.= 21, 2623] = 1225.22 ***		
F, FWl = 18098.26 ***			F, Wsp1 = 25199.70 ***		
F, Taxon = 43.94 ***			F, Taxon = 48.78 ***		
F, interaction (FWl:Taxon) = 6.85 ***			F, interaction (Wsp1: Taxon) = 4.78 ***		
CVE = 0.082			CVE = 0.060		
Residuals: morphology (R^2) = 0.096			Residuals: morphology (R^2) = 0.042		
Residuals: phylogeny (R^2) = 0.001			Residuals: phylogeny (R^2) = 0.009		
Residuals: shared (R^2) = 0.027			Residuals: shared (R^2) = 0.021		

Table 3. ANCOVA approaches, results after excluding non-significant terms and interactions. DBw (dry body weight) was the problem variable, FWl (forewing length, left table) or Wsp1 (Wingspan1) the independent variables retained together with their significant interactions with taxonomy at the family/superfamily levels. m and n are the coefficient corrections for the intercept (m) and slope (n) for the taxa indicated. The general intercept and slope are shown at the top of the left column of each model. The cross-validation error and the residual (non-explained) variance (R^2) attributable to morphology, phylogeny and morphology + phylogeny (shared) is presented in the lower rows. *** = P<0.001, ** = P<0.01, * = P<0.05, [a] = 0.05<P<0.10, [b] = Zygaenoidea (part.) = Limacodidae, Dalceridae plus Heterogynnidae.