Supporting information

S1 File. Additional information on the data and analyses

Appendix A. References for placental morphology

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12. Njogu A, Owiti GO, Persson E, Oduor-Okelo D (2006) Ultrastructure of the chorioallantoic placenta and chorionic vesicles of the lesser bush baby (*Galago senegalensis*). Placenta 27: 771–779. doi:10.1016/j.placenta.2005.07.003.

Appendix B. Statistical analysis: additional information and tables

Count data are normally analyzed using transformation such as square-root in place of log-transformation [1]. We attempted to use transformations commonly recommended for counts but these produced model residuals that violate some assumptions of the analysis, contrary to log-transformation presented here (see Methods). Results of analyses of placentation and microparasites using other transformations, however, did not differ qualitatively from those presented here. In the analysis of bacteria species richness the likelihood surface for the ML estimation of λ was flat between approximately 0.0 and 0.4. Therefore we repeated the analysis fixing λ at its estimated 95% confidence interval values to assess the influence of λ on the results. Results were qualitatively similar to those in which ML λ value was estimated.

References

1. Quinn, G. & Keough, M. 2002 Experimental design and data analysis for biologists. Cambridge: Cambridge University Press.

Table A. Microparasite species richness and placentation without controlling for the species richness of other microparasites (models include *Galagoides demidoff*).

Microparasite	**Bacteria**		**Protozoa**		**Virus**	
Predictors	t_{132}	p	t_{132}	p	t_{133}	p
Citation count	-2.3	0.022	-1.8	0.078	7.5	<0.001
(Citation count)^2	3.8	<0.001	3.3	0.001	-	-
Endotheliochorial	-2.4	0.020	-0.6	0.525	0.4	0.706
Hemochorial	-5.3	<0.001	6.2	<0.001	-0.1	0.991
***Post-hoc* testing**						
Epitheliochorial	5.2	<0.001	-6.2	<0.001	0.1	0.991
Endotheliochorial	1.8	0.069	-5.5	<0.001	0.3	0.740
Model summary						
Lh	-35.5		-10.3		-49.8	
ML λ	0.0		0.0		0.31	
R^2	0.40		0.48		0.30	

Placentation is coded with dummy variables. Epitheliochorial placentation is used as the reference level; for *post-hoc* testing hemochorial placentation is set as the reference level. For each predictor in the model we report the t-value with degrees of freedom (t_{df}) and p-value; for each model we report the model log-likelihood (Lh), the estimated value of the phylogenetic signal in the model residuals as quantified by λ (ML λ), and the amount of variance in microparasite species richness explained by the model (R^2).

Table B. Full models of bacteria species richness and placentation with *Galagoides demidoff*, while controlling for other microparasites' species richness.

	Bacteria	
Predictors	t_{130}	p
Citation count	-2.4	0.017
(Citation count)^2	2.9	0.005
Virus	6.1	<0.001
Protozoa	2.7	0.008
Endotheliochorial	-1.3	0.197
Hemochorial	-2.3	0.026
***Post-hoc* testing**		
Epitheliochorial	2.3	0.027
Endotheliochorial	0.9	0.394
Model summary		
Lh	-9.1	
ML λ	0.31	
R^2	0.56	

Placentation is coded with dummy variables. Epitheliochorial placentation is used as the reference level; for *post-hoc* testing hemochorial placentation is set as the reference level. For each predictor in the model we report the t-value with degrees of freedom (t_{df}) and p-value; for the model we report the model log-likelihood (Lh), the estimated value of the phylogenetic signal in the model residuals as quantified by λ

(ML λ), and the amount of variance in bacteria species richness explained by the model (R^2).