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Corti, M., Romano, A., Costanzo, A., Bentz, A. B., Navara, K. J., Parolini, M., Saino, N. and Rubolini, D. 2018. Protoporphyrin-based eggshell pigmentation is associated with female plumage colouration and predicts offspring sex ratio in the barn swallow. – Journal of Avian Biology doi: 10.1111/jav.01642

Appendix 1

Table A1. Generalized linear mixed models of female survival (surviving = 1; not surviving = 0) in relation to eggshell pigmentation scores (average clutch value). Female identity was included as a random factor in all models. For pigment intensity and spot size models we included as predictors the residuals of the linear mixed model accounting for their variation among breeding colonies. Models were not overdispersed (overdispersion < 1.16).

	Estimate (SE)	*Z*	p
Survival (n = 100)			
Pigment distribution	0.31 (0.28)	0.11	0.91
Age	0.20 (0.42)	0.48	0.63
Pigment intensity (residuals)	1.31 (1.43)	0.91	0.17
Age	0.20 (0.42)	0.49	0.62
Spot size (residuals)	–2.18 (1.50)	–1.45	0.15
Age	0.18 (0.42)	0.43	0.67
Pigment coverage	–0.06 (0.31)	–0.18	0.86
Age	0.20 (0.41)	0.47	0.64

Table A2. Models of parental feeding effort, measured as mean value of male feeding visits between two trials and relative male feeding rate, in relation to eggshell pigmentation scores (n = 41). For pigment intensity and spot size models we included as predictors the residuals of the linear mixed model accounting for their variation among breeding colonies.

		Estimate (SE)	t	p
Mean male feeding visits	Pigment distribution	-1.24 (1.24)	-1.00	0.32
	Brood size	4.42 (1.06)	4.18	< 0.001
	Hatching date	-0.08 (0.06)	-1.45	0.16
	Male age	-1.31 (1.84)	-0.71	0.48
	Pigment intensity (residuals)	1.92 (1.47)	1.31	0.20
	Brood size	3.82 (0.99)	3.85	<0.001
	Hatching date	-0.09 (0.06)	-1.58	0.12
	Male age	-2.06 (1.91)	-1.08	0.29
	Spot size (residuals)	-2.16 (2.73)	-0.79	0.44
	Brood size	3.90 (1.01)	3.86	<0.001
	Hatching date	-0.05 (0.06)	-0.92	0.36
	Male age	-1.13 (1.86)	-0.61	0.55
	Pigment coverage	-0.58 (1.34)	-0.44	0.63
	Brood size	4.17 (01.03)	4.03	< 0.001
	Hatching date	-0.06 (0.06)	-1.06	0.30
	Male age	-1.15 (1.86)	-0.62	0.54
Mean female feeding visits	Pigment distribution	-1.61 (1.06)	-1.52	0.19
	Brood size	4.28 (0.92)	4.65	< 0.001
	Hatching date	-0.04 (0.06)	-0.85	0.40
	Female age	0.34 (1. 92)	0.18	0.86
	Pigment intensity (residuals)	0.80 (1.27)	0.78	0.53
	Brood size	3.79 (0.90)	4.23	<0.001
	Hatching date	-0.04 (0.06)	-0.73	0.47
	Female age	-0.37 (2.00)	0.19	0.85
	Spot size (residuals)	1.47 (2.36)	0.62	0.54
	Brood size	3.88 (0.89)	4.32	< 0.001
	Hatching date	-0.03 (0.06)	-0.60	0.55
	Female age	-0.46 (2.03)	0.23	0.82
	Pigment coverage	1.79 (1.13)	1.58	0.12
	Brood size	3.55 (0.89)	4.00	< 0.001
	Hatching date	-0.06 (0.06)	-1.96	0.34
	Female age	0.20 (1.92)	0.10	0.91
Relative male feeding rate	Pigment distribution	0.02 (0.09)	0.27	0.79
	Brood size	0.03 (0.07)	0.38	0.71
	Hatching date	0.01 (0.01)	0.24	0.81
	Female age	0.12 (0.16)	0.76	0.45
	Male age	-0.12 (0.13)	-0.95	0.35
	Pigment intensity (residuals)	0.01 (0.01)	0.89	0.38
	Brood size	0.01 (0.01)	0.46	0.65
	Hatching date	0.01 (0.01)	0.01	0.99
	Female age	0.01 (0.01)	0.99	0.33
	Male age	-0.02 (0.01)	-1.25	0.22

Spot size (residuals)	-0.15 (0.19)	-0.79	0.44
Brood size	0.03 (0.07)	0.43	0.67
Hatching date	0.01 (0.01)	0.22	0.82
Female age	0.09 (0.16)	0.56	0.58
Male age	-0.11 (0.13)	-0.84	0.41
Pigment coverage	-0.08 (0.09)	-0.90	0.37
Brood size	0.05 (0.07)	0.67	0.51
Hatching date	0.01 (0.01)	0.38	0.71
Female age	0.13 (0.16)	0.80	0.43
Male age	-0.14 (0.13)	-1.05	0.30

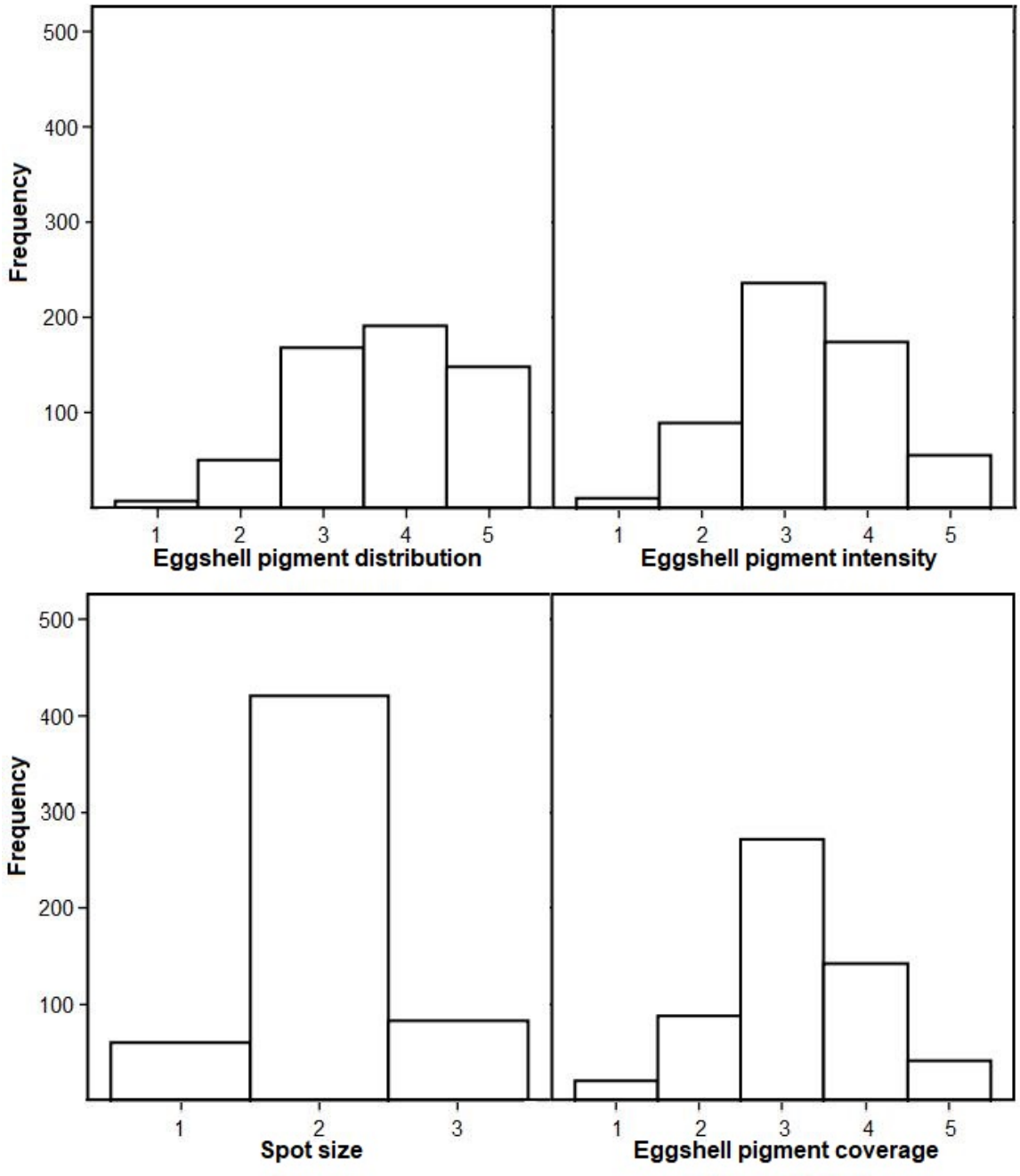

Figure A1. Frequency distribution of the four eggshell pigmentation scores.