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1. Anaemia has been reported in wild animals, typically associated with traumatic events or ill health. However, female birds routinely become ‘anaemic’ during egg-

100 ml) to 2.5 g/100 ml at the onset of egg production (Redshaw & Follett 1976), while plasma triglyceride levels increase from 4 mg ml⁻¹ to 24 mg ml⁻¹ owing to secretion of the second triglyceride-rich yolk precursor, VLDL₂ (e.g. Christians & Williams 1999). A second possible explanation for the decrease in haematocrit is that elevated oestradiol levels during egg-laying directly r

and temperature, year and the temperature * year interaction as independent terms in the model. The temperature * year interaction term was not significant for any stage and therefore this term was removed from the model. Haematocrit was not correlated with temperature within any stage ($r > 0.2$ in all cases), regardless of whether year was entered in the model or not. Furthermore, the variation in temperature between stages generally did not match the variation in haematocrit (data not shown). While temperature does not appear to influence haematocrit over the range of temperatures observed in this study, we included temperature as a covariate when investigating changes in haematocrit with breeding stage (see below).

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The relationship between haematocrit and stage of breeding varied among years (Fig. 1; interaction term, stage * year, $F_{10,301} = 4.22$, $p < 0.001$) so we analysed data for each year separately. Haematocrit varied with breeding stage in all 4 years (1998, $F_{4,90} = 6.78$,

($P > 0.4$). Without the interaction term in the model, there was a significant relationship between haematocrit and vitellogenin ($F_{1,67} = 4.4$; $P = 0.04$) but there was no significant variation between years ($F_{2,67} = 0.4$; $P > 0.6$). Pooling all years, the correlation between haematocrit and vitellogenin was positive and highly significant ($r = 0.32$; $P < 0.01$; Fig. 3).

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