**Supplementary results:**

**Table and Figures:**

**Table S3:** Model selection for each of the four traits measured (CTmax, CTmin, Topt, Tbreadth) and all environmental variables (the mean annual temperature, the mean temperature of the warmest quarter, the mean temperature of the coldest quarter, the mean precipitation of the wettest quarter, and the mean precipitation of the driest quarter). Model selection was performed using the most basal climatic first and then testing against composite variables (such as annual mean temperature).

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**Table S4** **:** Linear model results for just egg laying for both evolutionary and plastic effects. We tested the additive effects of each of the relevant climatic variables (mean temperature of the warmest quarter, of the coldest quarter, and mean precipitation of the wettest quarter and of the driest) while treating species and bootstrap iteration as random effects.

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**Figure S4:** 10 species were acclimated to three additional developmental temperatures prior to experiments (see Table S1 for details). For each species and trait, we calculated the strength of the acclimation response (slope shown as °C change of trait value per °C change in acclimation temperature). Filled symbols represent that the trait has a significant acclimation response, open symbols indicate that the acclimation response is not significant. To test if species from cold temperate climates have stronger acclimation response than species from stable tropical climates we regressed the acclimation response (the slope) against annual mean temperature for each species’ range. We found no significant relation between the species’ environmental origin and the species’ plasticity (slope) for either of the four traits tested.



**Figure S5:** Figure S6: (A) The thermal limits (CTmin and CTmax) and the calculated thermal optima for egg laying (Topt) for all 22 species reared at 19ºC as a function of annual mean temperature. The color of symbols corresponds to the mean absolute latitude of that species’ range (orange for low- and blue for high-latitude). \* indicates species included from Overgaard et al. 2014 and \*\* indicates species included in both studies. (B) The calculated breadth of thermal performance of egg laying (Tbreadth) as a function of annual mean temperature shows no relationship with annual mean temperature.

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**Figure S6:** Figure S7: (A) The thermal limits (CTmin and CTmax) and the calculated thermal optima for egg laying (Topt) for the 10 species reared at additional temperatures shown as a function of rearing temperature. The color corresponds to the mean absolute latitude of that species’ range (orange for low- and blue for high-latitude) with solid lines representing a significant slope, dashed lines represent a non-significant slope. The black solid line in the middle is the mean acclimation response. (B) The calculated breadth of thermal performance for egg laying(Tbreadth) as a function of acclimation temperature.

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