

Fig. S1. *C. caesalpiniae* large morph male metabolic heat production (Watts) scaled hypometrically with wet body mass (g). [QM]=0.67[wet mass]-0.66, $r^2=0.37$, $P<0.0001$, $n=64$, slope 95% CI (0.44,0.89).

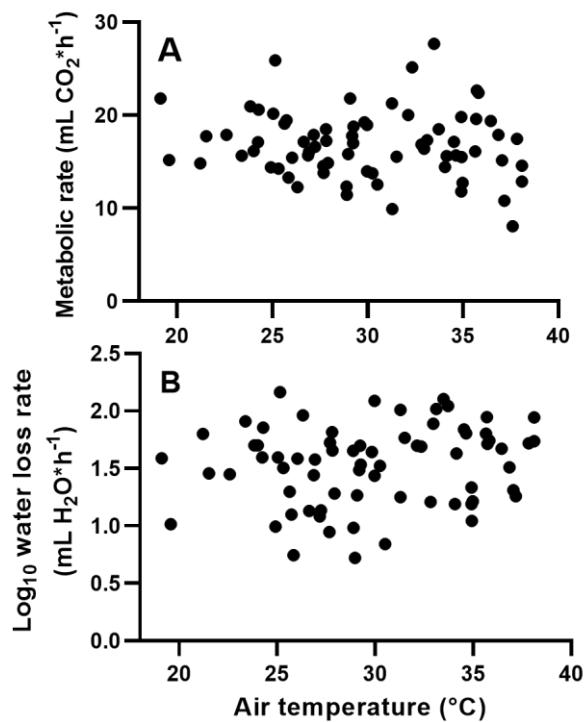


Fig. S2. (A) Metabolic rate of flying bees did not vary with air temperature. Mean=16.84±0.43. **(B)** Water loss rate of flying bees also did not vary with air temperature. Mean=1.53±0.042, (Mean±S.E.M.).

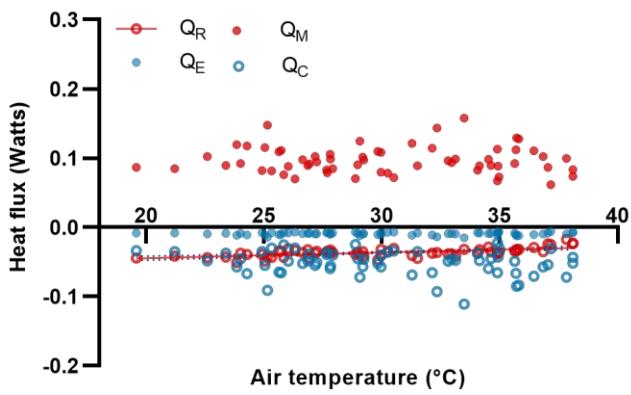


Fig. S3. The effect of air temperature on routes of heat production and loss (Watts) for *C. caesalpiniae* males flying in a shaded metabolic chamber. Linear regression: Q_M =not significant, mean= 0.097 ± 0.0025 . Q_E =not significant, mean= -0.0093 ± 0.00024 . Q_C =not significant, mean= -0.053 ± 0.0022 . (Means \pm S.E.M.). $[QR]=0.00081[T_{air}]-0.061$, $r^2=0.39$, $P<.0001$, slope 95% CI (0.00056,0.0011). $n=63$ for all parameters. Q_M =metabolic heat, Q_E =evaporative heat, Q_C =convective heat, QR =radiative heat.