7.3.5 *Cylas brunneus* (Musana et al.)

1. Development Time

Stage: Eggs Model: probit Slope: 11.32	Stage: Larvae Model: logit Slope: 9.15	Stage: Pupae Model: cloglog Slope: 3.55	Stage: Female Model: cloglog Slope: 1.34	Stage: Male Model: cloglog Slope: 0.82

2. Development Rate

Stage: Eggs Model 46: Janish 1 Parameters: Dmin=2.783 Topt=31.008 K=0.162 Formula: $y \sim 2/(Dmin*(e^{K*(x-Topt)}+e^{(-K)*(x-Topt)}))$
Stage: Larvae Model 47: Janish 2 Parameters: c=0.049 a=1.36 b=1.146 Tm=30.43 Formula: $y \sim 2*c/(a^{((x-Tm)+b^{(Tm-x)})})$
Stage: Pupae Model 46: Janish 1 Parameters: Dmin=3.735 Topt=31.588 K=0.128 Formula: $y \sim 2/(Dmin*(e^{K*(x-Topt)}+e^{(-K)*(x-Topt)}))$

3. Senescence

Stage: Female Model 25: Exponential Simple Parameters: b1=0 b2=0.143 Formula: $y \sim b1*e^{(b2*x)}$	Stage: Male Model 29: Rawtosky 1 Parameters: b=0.005 Tb=22.28 Formula: $y \sim b*(x - Tb)^2$

4. Mortality

Stage: Eggs Model 24: Taylor 1 Parameters: rm=0.898 Topt=25.604 Troh=8.548 Formula: $y \sim 1-rm*e^{(-0.5)*(-(x-Top)/Troh)^2}$
Stage: Larvae Model 24: Taylor 1 Parameters: rm=0.842 Topt=26.078 Troh=4.458 Formula: $y \sim 1-rm*e^{(-0.5)*(-(x-Top)/Troh)^2}$
Stage: Pupae Model 28: Wang 3 Parameters: Topt=29.726 Bl=3.854 Bh=0.537 H=0.008 Formula: $y \sim 1 - 1/(e^{(1+e^{-(x-Topt)/Bl})*(1+e^{-(Topt-x)/Bh})*H})$

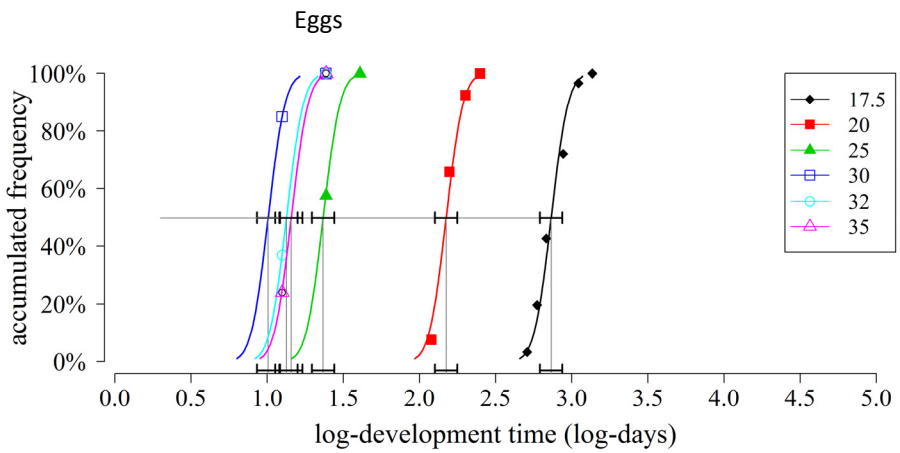
5. Total Oviposition

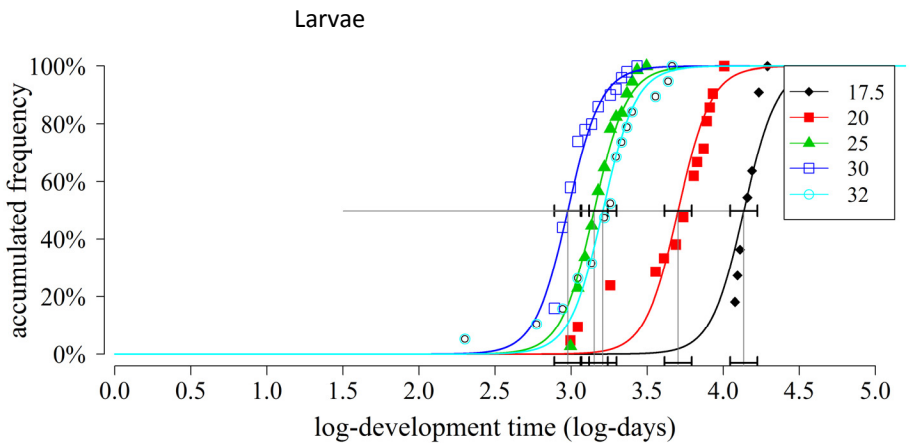
Stage: Female Model 45: Wang 10 Parameters: a=3.56 Tl=35.452 Th=11.074 Bl=39.725 Bh=8.407 Formula: $y \sim e^{a*(1-e^{-(x-Tl)/Bl})*(1-e^{-(Th-x)/Bh})}$

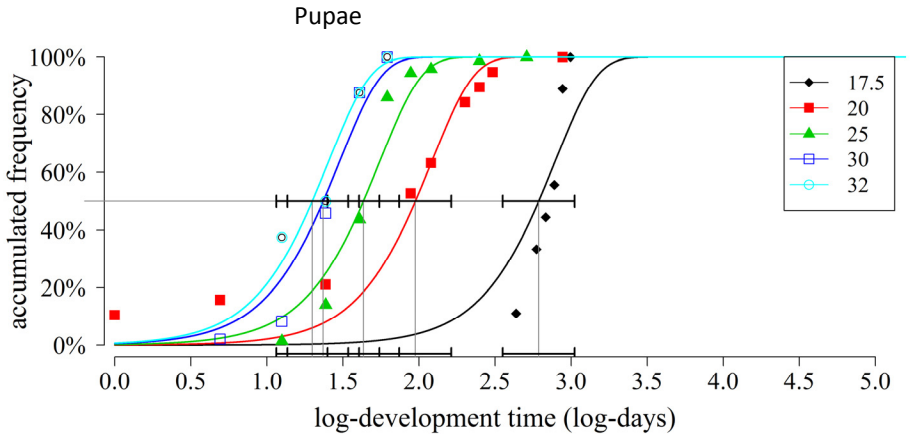
6. Relative Oviposition

Stage: Female
Model 2: Gamma
Parameters: a=2.35 b=2.756
Formula: y ~ pgamma(x, a, b)

7. Development Time

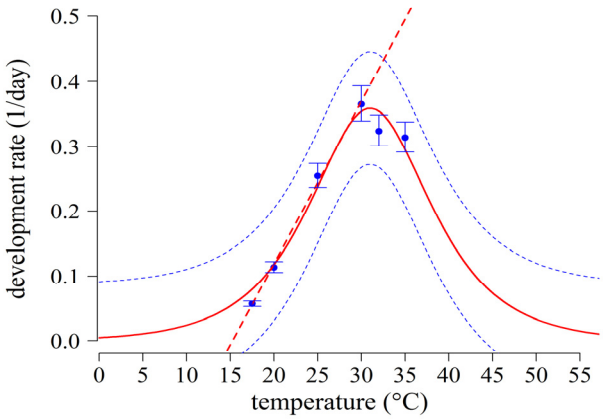




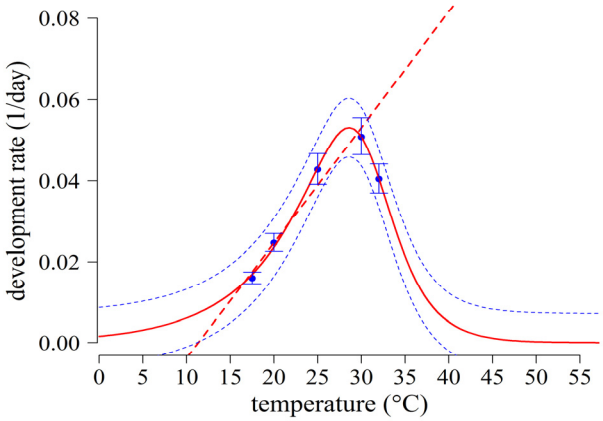


8. Development Rate

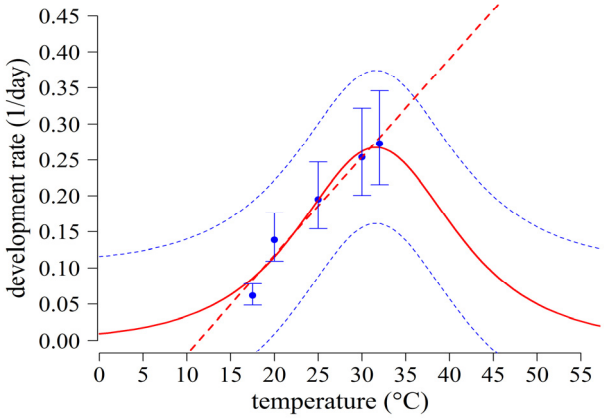
Eggs



Larvae

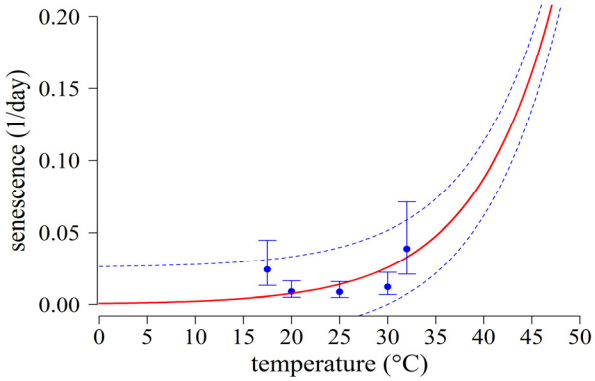


Pupae

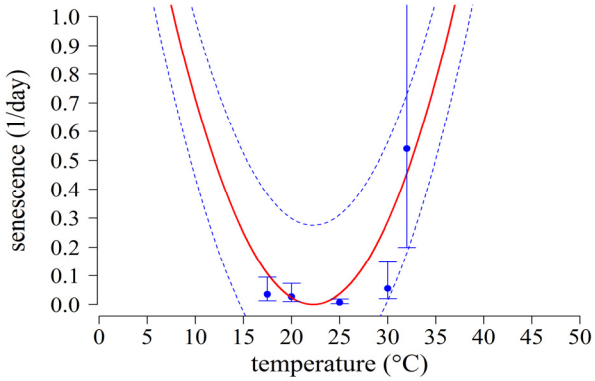


9. Senescence

Female

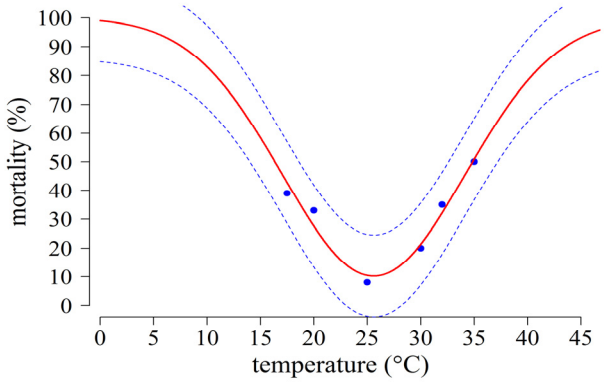


Male

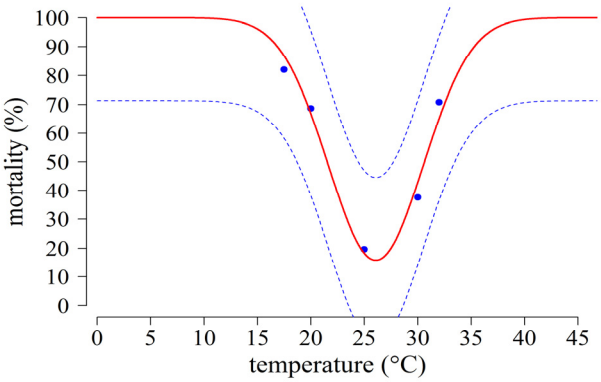


10. Mortality

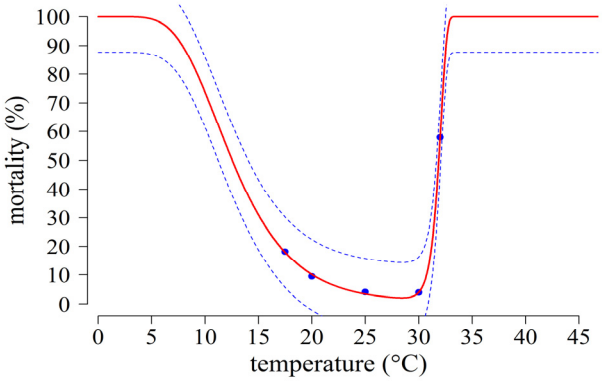
Eggs



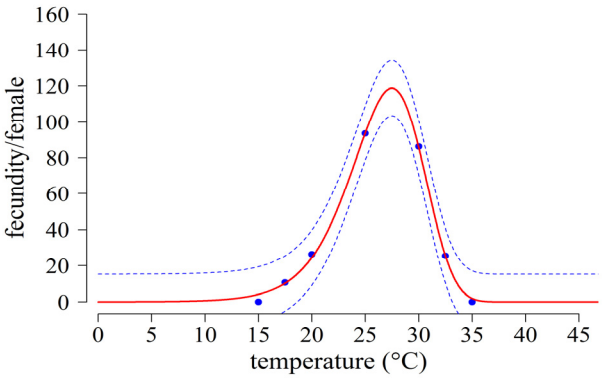
Larvae

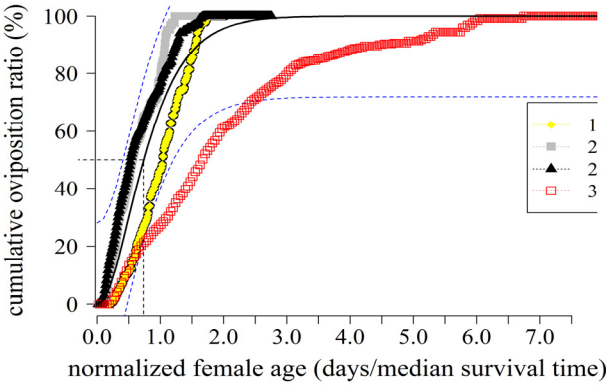
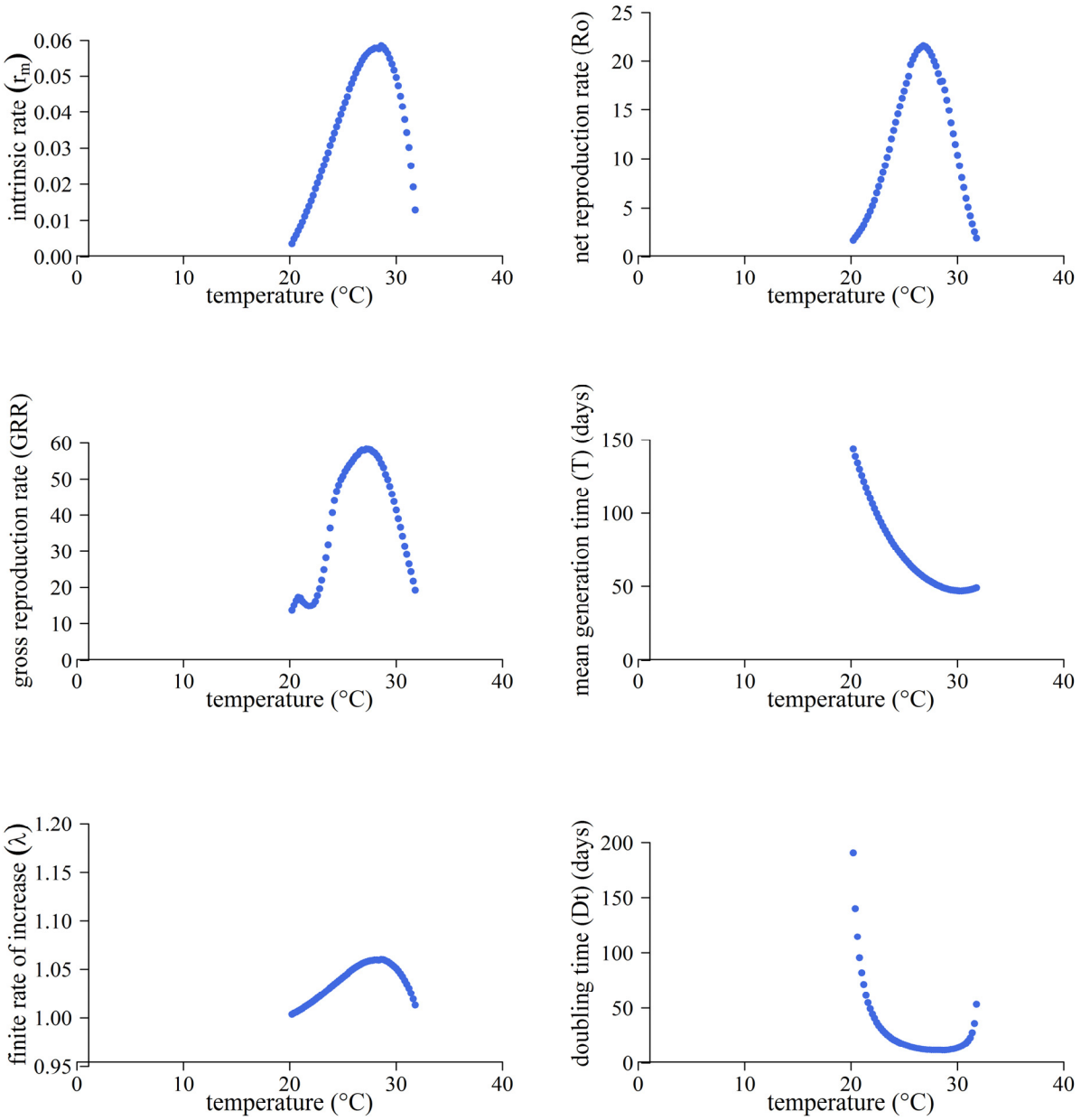


Pupae



11. Total and Relative Oviposition





12. Estimated life table parameters using deterministic simulation