

7.3.4 *Cylas puncticollis* (Okonya et al.)

1. Development Time

Stage: Eggs Model: cloglog Slope: 7.82	Stage: Larvae Model: logit Slope: 10.67	Stage: Pupae Model: logit Slope: 8.84	Stage: Female Model: cloglog Slope: 0.83	Stage: Male Model: probit Slope: 0.74
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2. Development Rate

Stage: Eggs Model 46: Janish 1 Parameters: Dmin=2.49 Topt=33.407 K=0.119 Formula: $y \sim 2 / (Dmin * (e^{K*(x-Topt)} + e^{(-K)*(x-Topt)}))$
Stage: Larvae Model 46: Janish 1 Parameters: Dmin=8.44 Topt=32.143 K=0.158 Formula: $y \sim 2 / (Dmin * (e^{K*(x-Topt)} + e^{(-K)*(x-Topt)}))$
Stage: Pupae Model 26: Tb Model Parameters: sy=0.148 b=0.263 Tb=15.871 DTb=3.702 Formula: $y \sim sy * e^{(b*(x-Tb) - e^{b*(x-Tb)/DTb})}$

3. Senescence

Stage: Female Model 29: Rawtosky 1 Parameters: b=0 Tb=13.007 Formula: $y \sim b * (x - Tb)^2$	Stage: Male Model 48: Tanigoshi Parameters: a0=1.551 a1=-0.17 a2=0.006 a3=-0 Formula: $y \sim a0 + a1*x + a2*x^2 + a3*x^3$
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4. Mortality

Stage: Eggs Model 39: Weibull Parameters: a=0 b=28.301 nn=3.816 Formula: $y \sim a * (abs(x - b))^{nn}$
Stage: Larvae Model 28: Wang 3 Parameters: Topt=32.445 Bl=3.001 Bh=1.443 H=0.02 Formula: $y \sim 1 - 1 / (e^{(1+e^{-(x-Topt)/Bl}) * (1+e^{-(Topt-x)/Bh}) * H})$
Stage: Pupae Model 39: Weibull Parameters: a=0 b=27.721 nn=4.582 Formula: $y \sim a * (abs(x - b))^{nn}$

5. Total Oviposition

Stage: Female Model 8: Gaussian Parameters: a=413.111 b=9.208 xo=28.073 c=12.581 Formula: $y \sim a * e^{(-b) * ((x-xo)/c)^2}$

6. Relative Oviposition

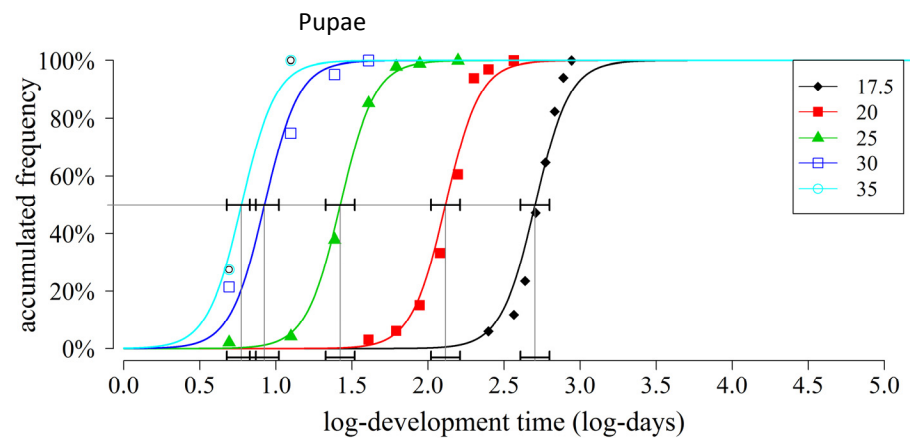
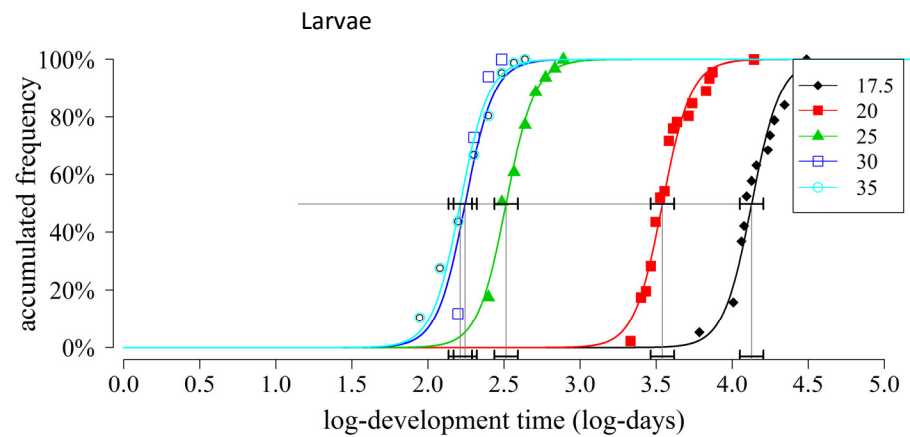
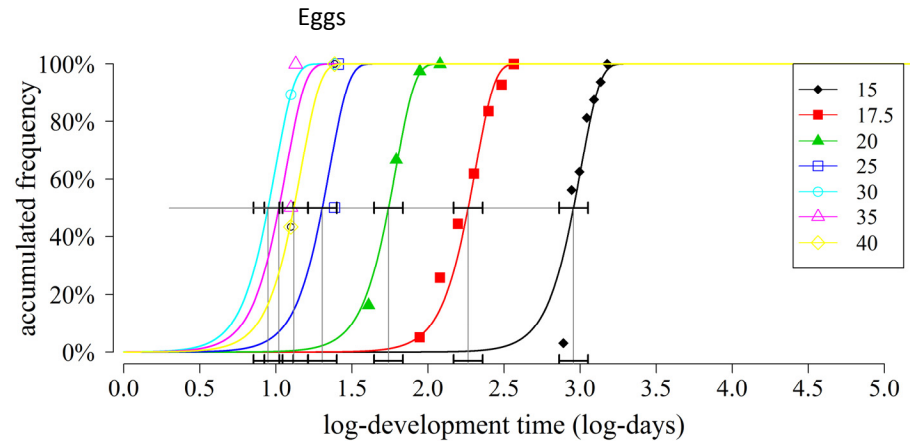
Stage: Female

Model 2: Gamma

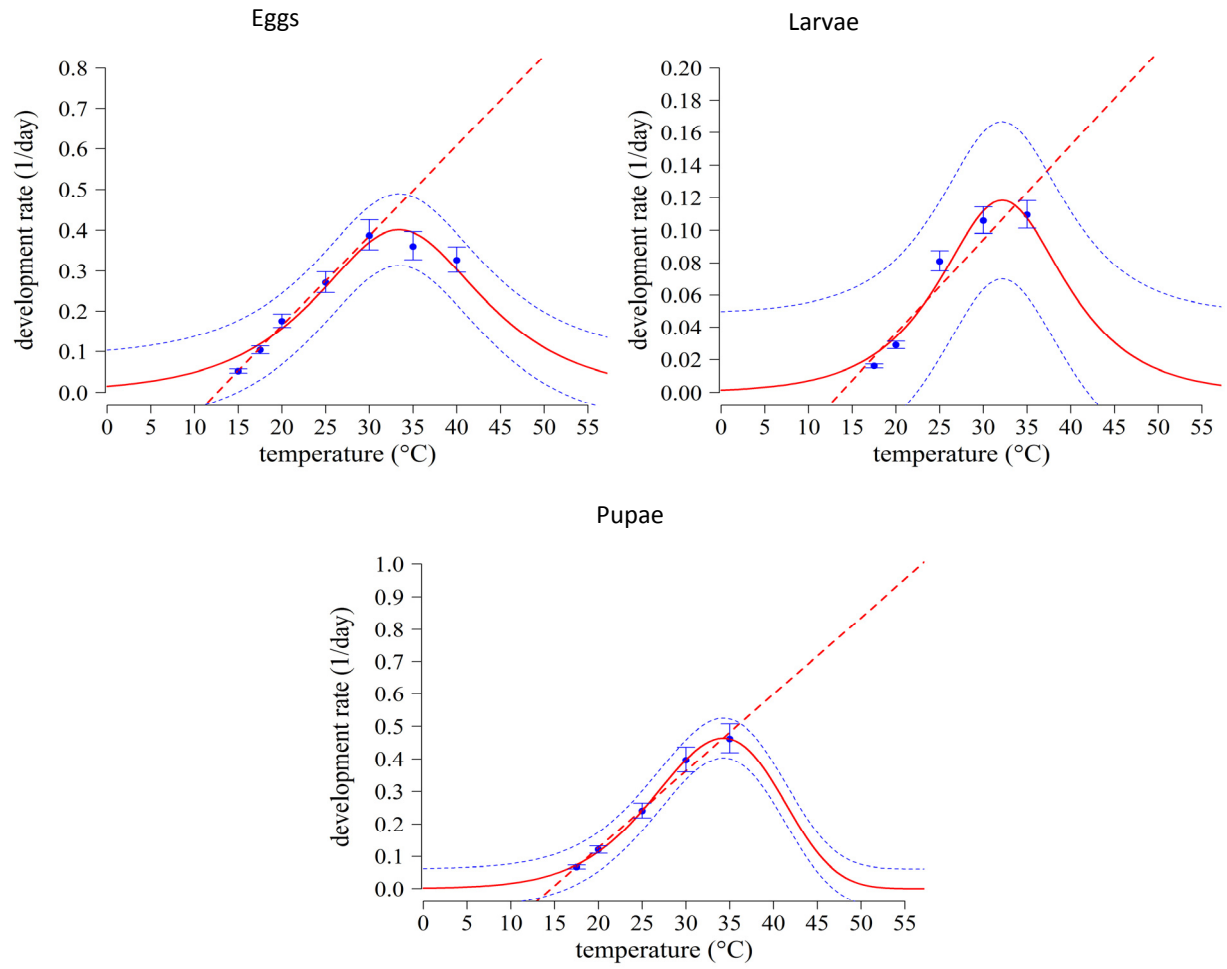
Parameters: $a=2.588$ $b=1.604$

Formula: $y \sim \text{pgamma}(x, a, b)$

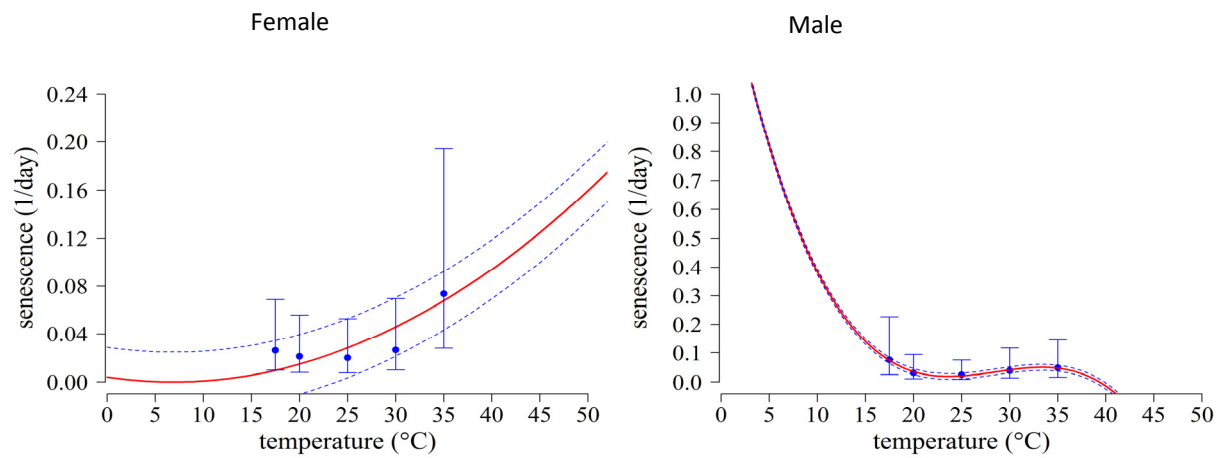
7. Development Time



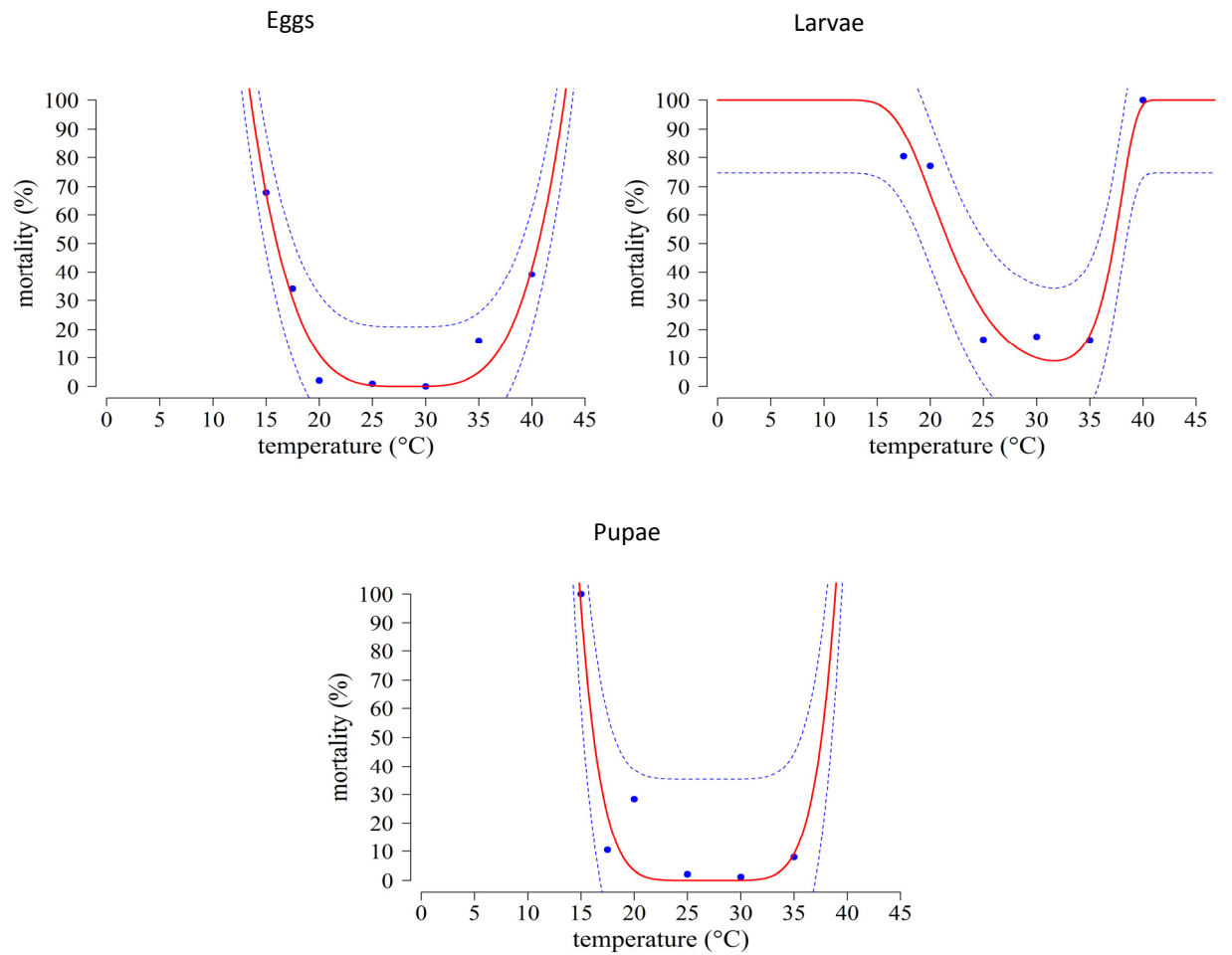
8. Development Rate



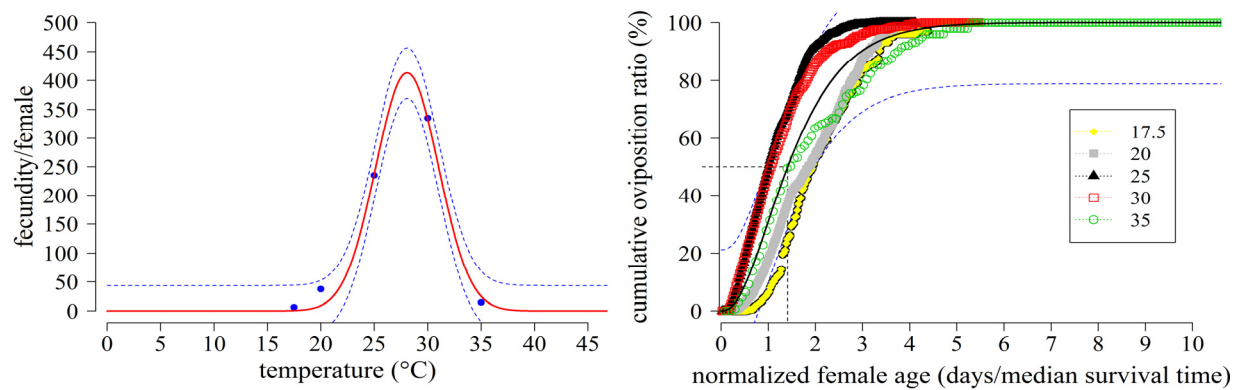
9. Senescence



10. Mortality



11. Total and Relative Oviposition



12. Estimated life table parameters using deterministic simulation

