

# 1 Errata

p.3, 1-4	population density (instead of population size)
p.4, 1. 6,7	if the birth, death, and migration rates
p.4, 1.14	(which means competition for hosts or patches)
p.20, 1. -1	$ x(t) - x_\infty  < \epsilon$
p.31	Figure 1.8. Delete yeild in caption
p.53, 1.16	in each generation
p.59, 1.16,17	$c_n$ instead of $c$ (3 places)
p.80, 1.10	$f(x, y) = x, g(x, y) = y$
p.80, 1.11	Generally, $f(x, y) = x$ and $g(x, y) = y$ are represented by $\dots$
p.83, Exercise 3	Add remark at end of exercise: (Global asymptotic stability means that every solution approaches the origin, not just solutions starting clse to the origin.)
p.105, 1-11	$D'(x_\infty) > R'(x_\infty)$
p.110, 1.14	$g'(x_\infty)$
p.110, 1-7	formulae
p.112, 1. 3	$B'(x_\infty)$
p.114, 1-1	$R'(x_\infty)$
p.128, 1.8	$\dots$ of solutions, (that is, curves in $\dots$ )
p.138,	Renumber second Exercise 10 as 11 and Exercises 11-14 as Exercises 12-15 respectively.
p.147, 1-9	around the equilibrium with the orbits approaching this equilibrium
p.149, 1.17	Add period at end of sentence
p.154, 1.19	However, for two-dimensional systems
p.154, 1-2	$x(t_n) \rightarrow \bar{x}, y(t_n) \rightarrow \bar{y}$
p.155,	Figure 4.9 Reverse lower right arrow direction
p.160, 1-8,-7	$x + y$ instead of $y + z$ (three places)
p.162, Exercise 12	Period at end should be inside parenthesis
p.165, (iv)	Give the units for $\mu, \beta,$ and $\gamma$
p.169, 1.14	$\mu_x + \mu_y + \sigma + \lambda = \dots$
p.171, 1-4	population, so that if $x$ and $y$ are not too close to zero
p.173, 1-15	Case 2 $c/a > \mu/\lambda > d/b$
p.179, Exercise 2	$60 - 3x - y$
p.191, 1-1	and in fact every orbit
p.216, 1-7	$a_3(a_1a_2 - a_3) > a_1^2a_4.$
p.217, 1.23	Section 5.9
p.218, Equation(5.30)	$f(x, y, z), g(x, y, z), h(x, y, z)$
p.222, 1-3	Section 5.9
p.241, 1.7	$(x_\infty(H), y_\infty(H))$
p.243, 1.7	$y_\infty(H)$
p.243, 1.12	$y_\infty(H)$
p.273,	Structured Population Models
p.284, 1-5	$\beta/\alpha = 1.18$ and $R_0 = 1.18$

p.290, Exercise 2	Consider a disease with $\beta = 1/3000$ ,
p.293, 1.9	Hyphenate Hethcote as Heth-cote
p.298, 1.4	The derivation of $A = 1/\beta I_\infty$ is obtained from considering surviving susceptible members at each age. This is the value that would be obtained from data giving the fraction of susceptibles at each age. However, if average age at infection has the normal meaning of average age at which those people who become infected do become infected, then the calculation would be different. The susceptible population at age $a$ is a fraction $e^{-(\mu + \beta I_\infty)a}$ of the number of newborn members, and the incidence of new infections is $\beta I_{\text{inf}} e^{-(\mu + \beta I_\infty)a}$ . This would lead to an average age at infection $A^* = 1/(\mu + \beta I_{\text{inf}})$ and the relation $L/A = R_0$ .
p.315, 1.-1	$-\gamma I(t - \omega)$
p.319, 1.-7	no greater than $\beta K - 2I \tau$ . The argument given is valid only if $R_0 < 3$ but a theorem in [34] guarantees asymptotic stability for all $R_0 > 1$ .
p.339, 1.-1	measurements of population size
p.340, 1.-7	$p_0, p_1, \dots, p_{m-1}$
p.343, 1.-13	$\sum_{j=0}^m \pi_j \beta_j \lambda_j^{-(j+1)} = 1$
p.345, Exercise 6	First row of matrix should be 0 0 1
p.353, Exercise 2	Consider a model with $\phi(a)$ arbitrary, $\mu$ constant, and $\beta(a) = \beta e^{-\mu a}$ . (i) Show that $\psi(t) = \beta e^{-2\mu t} \int_0^\infty e^{-\mu s} \phi(s) ds$ . (ii) Show that $B(t)$ satisfies the initial value problem $B'(t) = (\beta - 2\mu)B(t)$ , $B(0) = \beta \int_0^\infty e^{-\mu s} \phi(s) ds$ . (iii) Solve the initial value problem obtained in part (ii) to find that $B(t) = \beta e^{(\beta - 2\mu)t} \int_0^\infty e^{-\mu s} \phi(s) ds$
p.378, 1.4	$\frac{r - \sqrt{r^2 - 4A}}{2}$ (unstable)
p.385,	Section 7.2 1. 1.18    3. 2.06 %    5. 15.25 %
p.401,	Reorder references: Current [182], [183] should be between current [179] and [180]
p.409, 1.19	Assyria
Back cover, 1.17	recipient

## 2 Additions

Labels should be added as follows for the x-axis and y-axis respectively in the following figures.

p.34	Figure 1.10	p,Q
p.35	Figure 1.11	p,Q
p.36	Figure 1.12	p,Q
p.36	Figure 1.13	p,Q
p.97	Figure 3.1	t,x
p.101	Figure 3.2	t,x
p.108	Figure 3.5	t,x
p.116	Figure 3.7	t,x
p.121	Figure 3.8	t,x
p.208	Figure 5.28	u,y
p.209	Figure 5.29	u,y
p.210	Figure 5.30	u,y
p.244	Figure 6.13	x,y
p.306	Figure 7.5	S,I
p.307	Figure 7.6	t,I
p.308	Figure 7.7	t,I
p.317	Figure 7.8	$\beta, \gamma$
p.377	Figure A.1	x,y
p.378	Figure A.2	x,y

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