Suspected Errors in *Mathematical Biology II*

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Chapter 1

- **p.2**
  In the case of a single reactant or population we saw in Chapter 13, Volume I that limit cycle periodic solutions are not possible,
  should be
  In the case of a single reactant or population we saw in Chapter 1, Volume I that limit cycle periodic solutions are not possible,

- **p.3**
  the Field-Noyes model for the Belousov-Zhabotinskii reaction, which we considered in detail in Chapter 8.
  should be
  the Field-Noyes model for the Belousov-Zhabotinskii reaction, which we considered in detail in Chapter 8, Volume I.

- **p.13**
  Assuming that they compete for the same food resources, ... , (cf. Chapter 5, Volume I)
  should be
  Assuming that they compete for the same food resources, ... , (cf. Chapter 3, Volume I)

- **p.14**

$$\begin{gathered}\theta_i = b_i S_i \quad (i=1,2), \quad t = a_1 T, \quad \boldsymbol{x} = \sqrt{a_1/D_1}\,\boldsymbol{X}, \\ \gamma_1 = \frac{c_1}{b_2}, \quad \gamma_2 = \frac{c_2}{b_1}, \quad \kappa = \frac{D_2}{D_1}, \quad \alpha = \frac{a_1}{a_2}\end{gathered} \tag{1.17}$$

  should be

$$\begin{gathered}\theta_i = b_i S_i \quad (i=1,2), \quad t = a_1 T, \quad \boldsymbol{x} = \sqrt{a_1/D_1}\,\boldsymbol{X}, \\ \gamma_1 = \frac{c_1}{b_2}, \quad \gamma_2 = \frac{c_2}{b_1}, \quad \kappa = \frac{D_2}{D_1}, \quad \alpha = \frac{a_2}{a_1}\end{gathered} \tag{1.17}$$

- **p.14**

$$\begin{aligned}\frac{\partial \theta_1}{\partial t} &= \nabla^2 \theta_1 + \theta_1(1-\theta_1-\gamma_1\theta_2), \\ \frac{\partial \theta_2}{\partial t} &= \kappa \nabla^2 \theta_1 + \alpha\theta_2(1-\theta_2-\gamma_2\theta_1)\end{aligned} \tag{1.18}$$

should be

$$\frac{\partial\theta_1}{\partial t} = \nabla^2\theta_1 + \theta_1(1-\theta_1-\gamma_1\theta_2),$$
$$\frac{\partial\theta_2}{\partial t} = \kappa\nabla^2\theta_2 + \alpha\theta_2(1-\theta_2-\gamma_2\theta_1) \tag{1.18}$$

- **p.14**
  In the absence of diffusion we analysed this specific competition model system (1.18) in detail in Chapter 5, Volume I.
  should be
  In the absence of diffusion we analysed this specific competition model system (1.18) in detail in Chapter 3, Volume I.

- **p.14**
  it comes into the category of competitive exclusion (cf. Chapter 5, Volume I).
  should be
  it comes into the category of competitive exclusion (cf. Chapter 3, Volume I).

- **p.15**
  In general, the system of ordinary differential equations (1.18) cannot be solved
  should be
  In general, the system of ordinary differential equations (1.21) cannot be solved

- **p.18**
  It seems that the broad features of the displacement of the red squirrels by the grey ... discussed in Chapter 5, Volume I.
  should be
  It seems that the broad features of the displacement of the red squirrels by the grey ... discussed in Chapter 3, Volume I.

- **p.23**
  In Patch 1, where $ml < x < ml + l_1$ for $m = 0, 1, 2, \ldots,$
  should be
  In Patch 1, where $ml < x < ml + l_1$ for $m = 0, \pm1, \pm2, \ldots,$

- **p.23**
  Figure 1.6: the graph should be shifted $-l_2$ along x-axis.（グラフを x 軸負方向に l_2 だけ平行移動すれば正しくなる.）

- **p.25**
  At the boundaries between the patches, $x = x_i$, where $x_i = ml$ for $i = 2m$ and $x_i = ml + l_1$ for $i = 2m+1$

$(m = 0, 1, 2, \dots)$
should be
At the boundaries between the patches, $x = x_i$, where $x_i = ml$ for $i = 2m$ and $x_i = ml + l_1$ for $i = 2m+1$ $(m = 0, \pm1, \pm2, \dots)$,

- **p.25**

$$e_3 = \frac{\gamma_n - 1}{\gamma_n\gamma_e - 1}, \quad n_e = \frac{\gamma_e - 1}{\gamma_n\gamma_e - 1} \tag{1.47}$$

should be

$$e_3 = \frac{\gamma_e - 1}{\gamma_n\gamma_e - 1}, \quad n_3 = \frac{\gamma_n - 1}{\gamma_n\gamma_e - 1} \tag{1.47}$$

- **p.25**
As with the red and grey squirrel competition we know it is possible to have travelling wave solutions connecting the native-dominant steady state (e_1, n_1), to the existence steady state, (e_2, n_2), or the invader-dominant steady state, (e_3, n_3).
should be
As with the red and grey squirrel competition we know it is possible to have travelling wave solutions connecting the native-dominant steady state (e_1, n_1), to the invader-dominant steady state, (e_2, n_2), or the existence steady state, (e_3, n_3).

- **p.26**
The native-dominant steady state is linearly unstable if there exists a k^2 so that $\lambda(k^2) > 0$.
should be
The native-dominant steady state is linearly unstable if there exists a k^2 so that $\mathrm{Re}\,\lambda(k^2) > 0$.

- **p.27**

$$e_3 = \frac{\gamma_n G_2 - g_2}{\gamma_e\gamma_n - 1}, \quad n_3 = \frac{\gamma_e g_2 - G_2}{\gamma_e\gamma_n - 1} \tag{1.50}$$

should be

$$e_3 = \frac{\gamma_e g_2 - G_2}{\gamma_e\gamma_n - 1}, \quad n_3 = \frac{\gamma_n G_2 - g_2}{\gamma_e\gamma_n - 1} \tag{1.50}$$

- **p.27**
The stability conditions are ... $\gamma_n < g_2/G_2$: the coexistence steady state is stable, and all other steady states are unstable.
should be
The stability conditions are ... $\gamma_n < g_2/G_2$ and $\gamma_e < G_2/g_2$: the coexistence steady state is stable, and all other steady states are unstable.

- **p.29**

$$\frac{l_1 + G_2 l_2}{l} - \gamma_e + \lambda_0 < 0 \tag{1.64}$$

should be

$$\frac{l_1 + G_2 l_2}{l} - \gamma_e + \lambda_0 \leq 0 \tag{1.64}$$

- **p.29**

$$(1-\gamma_e)l_1 \geq (\gamma_e - G_2)l_2 \tag{1.65}$$

should be

$$(1-\gamma_e)l_1 > (\gamma_e - G_2)l_2 \tag{1.65}$$

- **p.30**

$$e(x,t) = \sum_{i=0}^{\infty} A_i e^{-\gamma_i t} \cos\left[\left(x - \frac{l_1}{2} - ml\right)\sqrt{1-\gamma_e+\lambda_i}\right] \tag{1.66}$$

should be

$$e(x,t) = \sum_{i=0}^{\infty} A_i e^{-\lambda_i t} \cos\left[\left(x - \frac{l_1}{2} - ml\right)\sqrt{1-\gamma_e+\lambda_i}\right] \tag{1.66}$$

- **p.31**

$$l_1^* = \frac{2}{\sqrt{1-\gamma_e}} \arctan\left[\sqrt{\frac{D_2(\gamma_e - G_2)}{1-\gamma_3}} \tanh\left(\frac{l_2}{2}\sqrt{\frac{\gamma_e - G_2}{D_2}}\right)\right] \tag{1.71}$$

should be

$$l_1^* = \frac{2}{\sqrt{1-\gamma_e}} \arctan\left[\sqrt{\frac{D_2(\gamma_e - G_2)}{1-\gamma_e}} \tanh\left(\frac{l_2}{2}\sqrt{\frac{\gamma_e - G_2}{D_2}}\right)\right] \tag{1.71}$$

- **p.31**

$$\lim_{l_2\to\infty} l_1(l_2) = l_1^c = \frac{2}{\sqrt{1-\gamma_e}} \arctan\sqrt{\frac{D_2(\gamma_e - G_2)}{1-\gamma_e}} \tag{1.72}$$

should be

$$\lim_{l_2\to\infty} l_1^*(l_2) = l_1^c = \frac{2}{\sqrt{1-\gamma_e}} \arctan\sqrt{\frac{D_2(\gamma_e - G_2)}{1-\gamma_e}} \tag{1.72}$$

- **p.31**

$$l_1^c > l_1^m = \frac{2\arctan\infty}{\sqrt{1-\gamma_e}} = \frac{\pi}{\sqrt{1-\gamma_e}} \tag{1.73}$$

should be

$$l_1^c < l_1^m = \frac{2\arctan\infty}{\sqrt{1-\gamma_e}} = \frac{\pi}{\sqrt{1-\gamma_e}} \tag{1.73}$$

- **p.31**

$$G_2^c = \gamma_e + \frac{\gamma_e - 1}{D_2} \tan^2 \left(\frac{l_1}{2} \sqrt{1 - \gamma_\epsilon} \right) \tag{1.75}$$

should be

$$G_2^c = \gamma_e + \frac{\gamma_e - 1}{D_2} \tan^2 \left(\frac{l_1}{2} \sqrt{1 - \gamma_e} \right) \tag{1.75}$$

- **p.37**

The wavefront solutions given by ... where $v = 0$ when $u = 1$ and $v = 1$ when $u = 0$.

should be

The wavefront solutions given by ... where $(u, v) \to (0, 1)$ if $s \to -\infty$ and $(u, v) \to (1, 0)$ if $s \to \infty$.

- **p.42**

The 'diffusion' coefficient D is associated with the axial current in the axon and, referring to the conservation of current equation (7.38) in Section 7.5, Volume I, ...

should be

deleted: the conservation of current equation is never introduced in Volume I. (7.38) indicates Hodgkin-Huxley model.

- **p.45**

Equation (1.98) is a specific example of the one studied in Section 13.5, Volume I, specifically equation (13.73), which has an exact analytical solution (13.78) with a unique wavespeed given by (13.77).

should be

Equation (1.98) is a specific example of the one studied in Section 13.5, Volume I, specifically equation (13.73), which has an exact analytical solution (13.88) with a unique wavespeed given by (13.87).

- **p.45**

This is the same condition we get from the sign determination given by (13.70) in Volume I

This is the same condition we get from the sign determination given by (13.80) in Volume I

- **p.48**

This is just a scalar equation ... the same as those studied in the last chapter. It is essentially the same as equation (13.62) which was discussed in detail in Section 13.5, Volume I.

should be

This is just a scalar equation ... the same as those studied in Chapter 13, Volume I. It is essentially the same as equation (13.83) which was discussed in detail in Section 13.5, Volume I.

- **p.48**

With the scaling as in (1.102)

should be

With the scaling as in (1.103)

- **p.61**

$$\frac{\partial}{\partial t}\begin{pmatrix} u \\ v \end{pmatrix} = \begin{pmatrix} \lambda(a) & -\omega(a) \\ \omega(a) & \lambda(a) \end{pmatrix}\begin{pmatrix} u \\ v \end{pmatrix} + D\nabla^2\begin{pmatrix} u \\ v \end{pmatrix}, \quad A^2 = u^2 + v^2 \qquad (1.135)$$

should be

$$\frac{\partial}{\partial t}\begin{pmatrix} u \\ v \end{pmatrix} = \begin{pmatrix} \lambda(a) & -\omega(a) \\ \omega(a) & \lambda(a) \end{pmatrix}\begin{pmatrix} u \\ v \end{pmatrix} + D\nabla^2\begin{pmatrix} u \\ v \end{pmatrix}, \quad a^2 = u^2 + v^2 \qquad (1.135)$$

- **p.63**

$$\lambda(a) = 1 - A^2, \quad \omega(a) = -\beta A^2 \ \ (\beta > 0) \qquad (1.145)$$

should be

$$\lambda(a) = 1 - a^2, \quad \omega(a) = -\beta a^2 \ \ (\beta > 0) \qquad (1.145)$$

- **p.64**

$$\lambda(a) = \varepsilon - aA^2, \quad \omega(a) = c - bA^2$$

should be

$$\lambda(A) = \varepsilon - aA^2, \quad \omega(A) = c - bA^2$$

- **p.67** Exercise 1
  where $a > 0$, $0 < b < 1$ and u and v represent the predator and prey respectively.
  should be
  where $a > 0$, $0 < b < 1$ and u and v represent the prey and predator respectively.

- **p.67** Exercise 2
  where U and V are respectively the predator and prey densities,
  should be
  where U and V are respectively the prey and predator densities,

- **p.70** Exercise 2
  [Problems 6 and 7 have been investigated in depth analytically by Rinzel and Terman (1982).]
  should be
  [Problems 7 and 8 have been investigated in depth analytically by Rinzel and Terman (1982).]

Chapter 2

- **p.73**
  Haekel *should be* Haeckel

- **p.85**
  The critical wavenumber k_c is then given (using (2.26)) by

should be
臨界波数 k_c は，（式 (2.25) を用いて）

- **p.86**
Note that, within the unstable range, $\mathrm{Re}\,\lambda(k^2) > 0$ has a maximum for the wavenumber k_m obtained from (2.25) with $d > d_c$.
should be
（この内容は誤っており，以下の訳注を設ける.）式 (2.25) から得られる k_m は，$h(k^2)$ を最小たらしめる k の値であり，これは $\mathrm{Re}\,\lambda(k^2) > 0$ を最大たらしめる k の値とは一般に一致しない．なお，後者の k の値は式 (2.68) で求める.

- **p.91**
Whenever (2.34) are satisfied and there is a range of wavenumbers $k = n\pi/p$ lying within the bounds defined by (2.29),
should be
条件 (2.35) がみたされ，かつ式 (2.29) の範囲に含まれる波数 $k = n\pi/p$ が存在するとき，

- **p.93**
$\boldsymbol{W}_k(x, y)$ *should be* $\boldsymbol{W}_{p,q}(x, y)$

- **p.104**
that is, all $\lambda(k^2)$ in (2.22) have $\mathrm{Re}\,\lambda(k^2 = 0) < 0$,
should be
すなわち，式 (2.23) の $\lambda(k^2)$ が $\mathrm{Re}\,\lambda(k^2 = 0) < 0$ を（2 解とも）みたさなければならない.

- **p.105**
by extending the parametric method we described in Chapter 3, Volume I, for determining the space in which oscillatory solutions were possible.
should be
入門編第 7 章にて振動解が生じるパラメータ領域を決定する際に扱った，媒介変数を用いた手法を用いる.

- **p.106** The second line of equation (2.57).

$$\Rightarrow \quad a > \frac{u_0(1-u_0^2)}{2}, \quad b = u_0 - a > \frac{u_0(1+u_0^2)}{2}$$

should be

$$\Rightarrow \quad a > \frac{u_0(1-u_0^2)}{2}, \quad b = u_0 - a < \frac{u_0(1+u_0^2)}{2}$$

- **p.108** in the legend of Figure 2.12
(that is, $d = 1$)
should be

deleted: The curve C does not correspond to any value of d.（削除：d の値がいくらであれ曲線 C には合致しない.）

- **p.109**
  that is, when $h_{\min}(k_c^2) = 0$,
  should be
  すなわち $h_{\min} = h({k_m}^2) = 0$ である状態から，

- **p.113**
  the Thomas (1975) and Schnakenberg (1979) systems, given respectively by (2.7) and (2.8)
  should be
  Thomas (1975) や Schnakenberg (1979) の系（それぞれ，式 (2.8)（の 2, 3 行目），(2.7) により定義される）

- **p.116**
  Myerscough and Murray (1992), for the case of a cell-chemotaxis system (see also Chapter 4), used the technique
  should be
  Myerscough and Murray (1992) は，細胞走化性系（第 5 章も参照）に対して上述の技法を用い，

- **p.121**
  and the first mode

  $$a_1 \exp\Big[f'(0) - D\big(\frac{\pi}{L}\big)^2 t\Big] \sin\frac{\pi x}{L}$$

  starts to grow with time.
  should be
  最初のモード

  $$a_1 \exp\Big\{\Big[f'(0) - D\big(\frac{\pi}{L}\big)^2\Big] t\Big\} \sin\frac{\pi x}{L}$$

  が時間経過とともに成長していく.

- **p.122**
  From the spatial symmetry in (2.77) and (2.81) — setting $x \to -x$ leaves the equations unchanged —
  should be
  式 (2.77) や式 (2.81) に見られる空間対称性，すなわち，x を $L - x$ に置換しても方程式が変化しないという対称性より

- **p.122**
  and integrate with respect to x from 0 to L
  should be
  x について，任意の x から $L/2$ まで積分を行うと，

- **p.124**
  when $D\pi^2 U/L_0^2$ is tangent to the curve $f(U)$, at P
  should be
  直線 $D\pi^2 U/L^2$ が曲線 $f(U)$ と点 P で接するとき

- **p.125**
  tangent to $F(U)$ at P.
  should be
  曲線 $f(U)$ と点 P で接する

- **p.128**
  $T3$ and $T4$ are not solution trajectories satisfying (2.94)
  should be
  しかし $T3$, $T4$ は，系 (2.93) の解軌道としては適さない

- **p.128**

$$L = \int_{U_Q}^{U_m} [V^+(U)]^{-1} dU + \int_{U_m}^{U'_Q} [V^-(U)]^{-1} dU \tag{2.96}$$

  should be

$$L = \int_{U_Q}^{U_m} [V^+(U)]^{-1} dU + \int_{U_m}^{U_{Q'}} [V^-(U)]^{-1} dU \tag{2.96}$$

- **p.132**

$$\begin{aligned} \frac{dE}{dt} &\leq -d \int_0^1 (u_{xx}^2 + v_{xx}^2) dx + 4m \int_0^1 (u_x^2 + v_x^2) dx \\ &\leq (4m - 2\pi^2 d) E \end{aligned} \tag{2.102}$$

  should be

$$\begin{aligned} \frac{dE}{dt} &\leq -d \int_0^1 (u_{xx}^2 + v_{xx}^2) dx + m \int_0^1 (u_x^2 + v_x^2) dx \\ &\leq (2m - 2\pi^2 d) E \end{aligned} \tag{2.102}$$

- **p.132**
  $(4m - 2\pi^2 d) < 0$ *should be* $2m - 2\pi^2 d < 0$

- **p.133**

$$m = \underset{\max}{\boldsymbol{u}} ||\nabla_{\boldsymbol{u}} \boldsymbol{f}(\boldsymbol{u})|| \tag{2.107}$$

  should be

$$m = \max_{\boldsymbol{u}} ||\nabla_{\boldsymbol{u}} \boldsymbol{f}(\boldsymbol{u})|| \tag{2.107}$$

- **p.133**

$$\begin{aligned}\frac{dE}{dt} &= \int_B \langle \nabla \boldsymbol{u}, \nabla \boldsymbol{u}_t \rangle d\boldsymbol{r} \\ &= \int_B \langle \nabla \boldsymbol{u}, \nabla D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} + \int_B \langle \nabla \boldsymbol{u}, \nabla \boldsymbol{f} \rangle d\boldsymbol{r} \\ &= \int_{\partial B} \langle \nabla \boldsymbol{u}, D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} - \int_B \langle \nabla^2 \boldsymbol{u}, D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} + \int_B \langle \nabla \boldsymbol{u}, \nabla_{\boldsymbol{u}} \boldsymbol{f} \cdot \nabla \boldsymbol{u} \rangle d\boldsymbol{r} \\ &\le -d \int_B |\nabla^2 \boldsymbol{u}|^2 d\boldsymbol{r} + mE. \end{aligned} \tag{2.108}$$

should be

$$\begin{aligned}\frac{dE}{dt} &= \int_B \langle \nabla \boldsymbol{u}, \nabla \boldsymbol{u}_t \rangle d\boldsymbol{r} \\ &= \int_B \langle \nabla \boldsymbol{u}, \nabla D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} + \int_B \langle \nabla \boldsymbol{u}, \nabla \boldsymbol{f} \rangle d\boldsymbol{r} \\ &= \int_{\partial B} \langle \boldsymbol{n} \cdot \nabla \boldsymbol{u}, D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} - \int_B \langle \nabla^2 \boldsymbol{u}, D \nabla^2 \boldsymbol{u} \rangle d\boldsymbol{r} + \int_B \langle \nabla \boldsymbol{u}, \nabla_{\boldsymbol{u}} \boldsymbol{f} \cdot \nabla \boldsymbol{u} \rangle d\boldsymbol{r} \\ &\le -d \int_B |\nabla^2 \boldsymbol{u}|^2 d\boldsymbol{r} + 2mE. \end{aligned} \tag{2.108}$$

- **p.134**

$$\frac{dE}{dt} \le (m - 2\mu d)E \quad \Rightarrow \quad \lim_{t\to\infty} E(t) = 0 \quad \text{if} \quad m < 2\mu d \tag{2.110}$$

should be

$$\frac{dE}{dt} \le (2m - 2\mu d)E \quad \Rightarrow \quad m < \mu d \text{ ならば } \lim_{t\to\infty} E(t) = 0 \tag{2.110}$$

- **p.134**
Murray (1975) showed that in a finite domain all spatial heterogeneities must die out (see Exercise 11).
should be
Murray (1975) は，領域が有界のとき，いかなる空間的非一様性も排除されてしまうことを示した（演習問題 8 を参照されたい）.

- **p.136**

$$\begin{aligned} &b > 2[u(1+Ku_0^2)]^{-1} - 1, \quad b > 0, \\ &b > 2[u(1+Ku_0^2)]^{-2} - \frac{1}{d}, \\ &b < 2[u(1+Ku_0^2)]^{-2} - 2\sqrt{2}[du(1+Ku_0^2)]^{-1/2} + \frac{1}{d} \end{aligned}$$

should be

$$\begin{aligned} &b > 2[u_0(1+Ku_0^2)]^{-1} - 1, \quad b > 0, \\ &b > 2[u_0(1+Ku_0^2)]^{-2} - \frac{1}{d}, \\ &b < 2[u_0(1+Ku_0^2)]^{-2} - 2\sqrt{2}[du_0(1+Ku_0^2)]^{-1/2} + \frac{1}{d} \end{aligned}$$

- **p.137**

$$u_t = ru(1 - \frac{u}{K}) - EU + Du_{xx},$$
$$u = 0 \text{ on } x = H, \qquad u_x = 0 \text{ on } x = 0$$

should be

$$u_t = ru(1 - \frac{u}{K}) - Eu + Du_{xx},$$
$$u = 0 \quad (x = H), \qquad u_x = 0 \quad (x = 0).$$

- **p.138**

$$\frac{\partial u}{\partial t} = \gamma f(u,v) + d_1 \frac{\partial^2 u}{\partial x^2} + d_2 \frac{\partial^2 u}{\partial y^2},$$
$$\frac{\partial v}{\partial t} = \gamma g(u,v) + d_3 \frac{\partial^2 u}{\partial x^2} + d_4 \frac{\partial^2 u}{\partial y^2}$$

should be

$$\frac{\partial u}{\partial t} = \gamma f(u,v) + d_1 \frac{\partial^2 u}{\partial x^2} + d_2 \frac{\partial^2 u}{\partial y^2},$$
$$\frac{\partial v}{\partial t} = \gamma g(u,v) + d_3 \frac{\partial^2 v}{\partial x^2} + d_4 \frac{\partial^2 v}{\partial y^2}$$

Chapter 3

- **p.146**
  ... surface of a tapering cylinder of length s with $0 \le z \le s$ and with circumferential variable q.
  should be
  ... surface of a tapering cylinder of length s with $0 \le z \le s$ and with circumferential variable θ.

- **p.146**

$$\gamma L = k_1^2 < k^2 < \frac{n^2}{r^2} + \frac{m^2\pi^2}{s^2} < k_2^2 = \gamma M$$

should be

$$\gamma L = k_1^2 < k^2 = \frac{n^2}{r^2} + \frac{m^2\pi^2}{s^2} < k_2^2 = \gamma M$$

- **p.167**

$$f(g;0) = 0 \quad \Rightarrow \quad g = 0, \quad g_1, g_2 = \frac{k_2 \pm (k_2^2 - 4k_3^2)^{1/2}}{2k_2} \tag{3.14}$$

should be

$$f(g;0) = 0 \quad \Rightarrow \quad g = 0, \quad g_2, g_3 = \frac{k_2 \pm (k_2^2 - 4k_3^2)^{1/2}}{2k_3} \tag{3.14}$$

- **p.168**
  The results are shown in Figures 3.12 to 3.15.

should be

The results are shown in Figures 3.15 to 3.18.

- **p.172**

  Substituting in (3.8) we can calculate the distance ...

  should be

  Substituting in (3.18) we can calculate the distance ...

- **p.172**

  Figures 3.15(c) and (f) are specific,

  should be

  Figures 3.18(c) and (f) are specific,

- **p.176**

  We consider a single eyespot with the standard length a in the nondimensionalisation (3.11) to be the diameter of the control in the experiment. Since we are interested in the growth of the eyespot to its normal size this means that $L = a$ and ...

  should be

  We consider a single eyespot with the standard length L in the nondimensionalisation (3.11) to be the diameter of the control in the experiment. Since we are interested in the growth of the eyespot to its normal size this means that $a = L$ and ...

- **p.177**

  ... we can determine D, k and C from a best fit analysis.

  should be

  ... we can determine D, K and C from a best fit analysis.

- **p.184**

$$\nabla^2\psi + k_2\psi = 0, \quad (\boldsymbol{n}\cdot\nabla)\psi = 0 \quad \text{on} \quad r = 1, \delta \tag{3.41}$$

  should be

$$\nabla^2\psi + k^2\psi = 0, \quad (\boldsymbol{n}\cdot\nabla)\psi = 0 \quad \text{on} \quad r = 1, \delta \tag{3.41}$$

- **p.185**

  ... the problem becomes one-dimensional and the eigenvalues $k \to n$, so we ...

  should be

  ... the problem becomes one-dimensional and the eigenvalues $k_n \to n$, so we ...

- **p.186**

If we now choose the basic length to be the radius r_i of the annulus ...
should be
If we now choose the basic length to be the radius R_i of the annulus ...

Chapter 4

- **p.199**
  while for embryos incubated at 33°C it is around day 35.5
  should be
  while for embryos incubated at 33°C it is around day 36.5

- **p.207**
  Here we are interested in the spatial patterning of the placodes as in Figure 4.10(f).
  should be
  Here we are interested in the spatial patterning of the placodes as in Figure 4.11.

- **p.218**
  If we now carry out the scale transformation in (4.3)
  should be
  If we now carry out the scale transformation in (4.4)

- **p.222**
  some length L_c a mode 2-like solution as in Figure 4.15(b)
  should be
  some length L_c a mode 2-like solution as in Figure 4.15(c)

- **p.222**
  So, when the subdomain, on which c is below the threshold, has grown large enough, a single mode spatial pattern in u and v will start to grow like the mode 2 pattern in Figure 4.15(b).
  should be
  So, when the subdomain, on which c is below the threshold, has grown large enough, a single mode spatial pattern in u and v will start to grow like the mode 2 pattern in Figure 4.15(c).

- **p.224**
  A representative continuous function of time for the source of inhibitor at the anterior end of the jaw
  should be
  A representative continuous function of time for the source of inhibitor at the posterior end of the jaw

- **p.226**
  Figure 4.17 are plotted on the domain $[0, 1]$ but the actual domain size is $[0, \exp rt_1]$ where r is the growth rate parameter of the jaw.

should be

Figure 4.17 are plotted on the domain $[0, 1]$ but the actual domain size is $[0, \exp rt]$ where r is the growth rate parameter of the jaw.

- **p.231**

  The most striking prediction result is again obtained when the near-end (posterior) regions of the jaw domain are initially affected.

  should be

  The most striking prediction result is again obtained when the anterior regions of the jaw domain are initially affected.

- **p.240**

  With a two-dimensional domain with sides L_x and L_y, we consider the wavevector $\boldsymbol{k} = (k_x, k_y)$, where $k_x = m\pi/L$, $k_y = l\pi/L$ with m and l integers.

  should be

  With a two-dimensional domain with sides L_x and L_y, we consider the wavevector $\boldsymbol{k} = (k_x, k_y)$, where $k_x = m\pi/L_x$, $k_y = l\pi/L_y$ with m and l integers.

- **p.244**

  From the nondimensionalisation (4.39) this also corresponds to slow production or rapid diffusion or decay of chemoattractant in the dimensional problem.

  should be

  From the nondimensionalisation (4.21) this also corresponds to slow production or rapid diffusion or decay of chemoattractant in the dimensional problem.

- **p.249**

  Figure 4.2 shows a typical evolution of such a pattern for the system (4.30).

  should be

  Figure 4.2 shows a typical evolution of such a pattern for the system (4.31).

Chapter 5

- **p.255**

  Figure 5.1 (a) → (b), (b) → (a) (opposite).

- **p.258**

  If the dissolution happens quickly, the aggregates appear to be ...

  should be

  If the dissolution happens slowly, the aggregates appear to be ...

- **p.258**

On the other hand if the dissolution happens a little less quickly,
should be
On the other hand if the dissolution happens quickly,

- **p.258**
  If the dissolution happens even more slowly,
  should be
  If the dissolution happens less quickly,

- **p.264**

$$\frac{\partial n}{\partial t} = D_n \nabla^2 n - \nabla \left(\frac{k_1 n}{(k_2 + c)^2} \nabla c \right) + k_3 n \left(\frac{k_4 s^2}{k_9 + s^2} - n \right), \tag{5.11}$$

should be

$$\frac{\partial n}{\partial t} = D_n \nabla^2 n - \nabla \cdot \left(\frac{k_1 n}{(k_2 + c)^2} \nabla c \right) + k_3 n \left(\frac{k_4 s^2}{k_9 + s^2} - n \right), \tag{5.11}$$

- **p.265**

$$\frac{\partial n}{\partial t} = D_n \nabla^2 n - \nabla \left(\frac{k_1 n}{(k_2 + c)^2} \nabla c \right), \tag{5.14}$$

should be

$$\frac{\partial n}{\partial t} = D_n \nabla^2 n - \nabla \cdot \left(\frac{k_1 n}{(k_2 + c)^2} \nabla c \right), \tag{5.14}$$

- **p.269**

$$u(x,t) = 1 + \varepsilon f(t) \sum_k e^{ikx}, \quad v(x,t) = \frac{t}{\mu + 1} + \varepsilon g(t) \sum_k e^{ikx} \tag{5.23}$$

should be

$$u(x,t) = 1 + \varepsilon \sum_k f_k(t) e^{ikx}, \quad v(x,t) = \frac{t}{\mu + 1} + \varepsilon \sum_k g_k(t) e^{ikx} \tag{5.23}$$

- **p.271**
  The point $\tau = \tau_{\text{crit}}$ at which λ_+ passes through zero is the same point
  should be
  The point $\tau = \tilde{\tau}_{\text{crit}}$ at which λ_+ passes through zero is the same point

- **p.271**
  We can determine the fastest growing wavenumber, K_{grow} say,
  should be
  We can determine the largest growing wavenumber, K_{largest} say,

(最も速く成長するモードとは λ_+ が最大となるモードであり，本文の $\lambda(k^2) = 0$ なるモードとは不安定化しているモードの最大値である．また，p.274 の K_{grow} は最も速く成長するモードを指すことから，ここでの記号を K_{largest} と改めた．)

- **p.271**

$$K_{\text{grow}}^2 = \frac{2}{\tau}\left(\frac{\alpha\mu}{d\tau} - 1\right).$$

should be

$$K_{\text{largest}}^2 = \frac{2}{\tau}\left(\frac{\alpha\mu}{d\tau} - 1\right).$$

- **p.272**
  $F(\tau_0) = 1\,(= f(0))$ *should be* $F_1(\tau_0) = 1\,(= f(0))$

- **p.275**
  Among other numerical checks all of the solutions were checked against the integral form (5.35) of the conservation of bacteria
  should be
  ((5.21) 直後の式)

- **p.275**
  As predicted by (5.32),
  should be
  As predicted by (5.31),

- **p.275**
  patterns consisting of a random arrangement of spots were generated as shown in Figure 5.8.
  should be
  patterns consisting of a random arrangement of spots were generated as shown in Figure 5.9(a).

- **p.276**
  Initially the cells are uniformly distributed over the one-dimensional domain and disturbed with a small perturbation of $O(0^{-1})$.
  should be
  Initially the cells are uniformly distributed over the one-dimensional domain and disturbed with a small perturbation of $O(10^{-1})$.【corrected to be consistent with Tyson et al. (1999)】

- **p.277**
  $\tau = 0$, the initial conditions, $\tau = 1$, $\tau = 2$, $\tau = 3.002$. (b) Surface plot of the solution for $\tau = 2$ ...
  should be
  $t = 0$, the initial conditions, $t = 1$, $t = 2$, $t = 3.002$. (b) Surface plot of the solution for $t = 2$ ...

- **p.281**

$$\frac{\partial u}{\partial t} = d_u \nabla^2 u - \alpha \nabla \cdot \left(\frac{u}{(1+v)^2} \nabla v \right) + \rho u \left(\delta \frac{w}{1+w} - u \right) \tag{5.41}$$

should be

$$\frac{\partial u}{\partial t} = d_u \nabla^2 u - \alpha \nabla \cdot \left(\frac{u}{(1+v)^2} \nabla v \right) + \rho u \left(\delta \frac{w^2}{1+w^2} - u \right) \tag{5.41}$$

- **p.281**

$$(u^*, v^*) = \left(\delta \frac{w}{1+w}, \beta w \frac{u^*}{\mu + u^{*\,2}} \right) \tag{5.43}$$

should be

$$(u^*, v^*) = \left(\delta \frac{w^2}{1+w^2}, \beta w \frac{u^*}{\mu + u^{*\,2}} \right) \tag{5.43}$$

- **p.281**

$$\begin{aligned} &\chi(v) = \frac{1}{(1+v)^2}, \quad f(u,v) = \rho u \left(\delta \frac{w}{1+w} - u \right), \\ &g(u,v) = \beta w \frac{u^2}{\mu + u^2} - uv \end{aligned} \tag{5.46}$$

should be

$$\begin{aligned} &\chi(v) = \frac{1}{(1+v)^2}, \quad f(u,v) = \rho u \left(\delta \frac{w^2}{1+w^2} - u \right), \\ &g(u,v) = \beta w \frac{u^2}{\mu + u^2} - uv \end{aligned} \tag{5.46}$$

- **p.281**

$$\begin{pmatrix} u_1 \\ v_1 \end{pmatrix} = \begin{pmatrix} c_1 \\ c_2 \end{pmatrix} e^{\lambda t + i\boldsymbol{k}x} \tag{5.52}$$

should be

$$\begin{pmatrix} u_1 \\ v_1 \end{pmatrix} = \begin{pmatrix} c_1 \\ c_2 \end{pmatrix} e^{\lambda t + i\boldsymbol{k}\cdot\boldsymbol{x}} \tag{5.52}$$

- **p.283**

  Figure 5.11: $\sigma \to \operatorname{Re}\lambda$ (vertical axis).

- **p.286**

$$\nabla^2 \psi + k^2 \psi = 0, \quad \begin{cases} \psi|_{S_1} = \psi|_{S_2} \\ \psi|_{S_3} = \psi|_{S_4} \end{cases} \tag{5.61}$$

should be

$$\nabla^2 \psi + k^2 \psi = 0, \quad \begin{cases} \psi|_{S_2} = \psi|_{S_4} \\ \psi|_{S_1} = \psi|_{S_3} \end{cases} \tag{5.61}$$

- **p.286**
  where the $\boldsymbol{k}_n^2$ are allowable eigenvectors, which we discuss below. Substituting the boundary conditions in (5.61) into the solutions (5.62) we obtain
  should be
  where the $\boldsymbol{k}_n$ are allowable eigenvectors, which we discuss below. Substituting the the solutions (5.62) into boundary conditions in (5.61) we obtain

- **p.288**

$$\begin{aligned}
&\frac{\partial u}{\partial t} = \hat{\omega}\,\frac{\partial \hat{u}}{\partial T}, \quad \nabla^2 u = \nabla^2 \hat{u},\\
&\alpha\nabla\cdot(u\chi(v)\nabla v) = \alpha\nabla\cdot\left[(u^*+\hat{u})\left(\chi^* + \chi_v^*\hat{v} + \frac{1}{2}\chi_{vv}^*\hat{v}^2 + \cdots\right)\nabla\hat{v}\right]\\
&\quad = u^*\chi^*\nabla^2\hat{v} + (u^*\chi^*\nabla\hat{v} + \chi^*\nabla\hat{u})\cdot\nabla\hat{v}\\
&\quad + \left\{\frac{1}{2}\,u^*\chi_{vv}^*\nabla(\hat{v}^2) + \chi_v^*\nabla(\hat{u}\hat{v})\right\}\cdot\nabla\hat{v} + \cdots,\\
&f(u,v) = f^* + (f_u^* + f_v^*)\hat{u} + \frac{1}{2}(f_{uu}^* + f_{vv}^*)\hat{u}^2 + f_{uv}^*\hat{u}\hat{v}\\
&\qquad + \frac{1}{6}(f_{uuu}^* + f_{vvv}^*)\hat{u}^3 + \cdots
\end{aligned} \tag{5.68}$$

should be

$$\begin{aligned}
&\frac{\partial u}{\partial t} = \hat{\omega}\,\frac{\partial \hat{u}}{\partial T}, \quad \nabla^2 u = \nabla^2 \hat{u},\\
&\alpha\nabla\cdot(u\chi(v)\nabla v) = \alpha\nabla\cdot\left[(u^*+\hat{u})\left(\chi^* + \chi_v^*\hat{v} + \frac{1}{2}\chi_{vv}^*\hat{v}^2 + \cdots\right)\nabla\hat{v}\right]\\
&\quad = \alpha\Big[u^*\chi^*\nabla^2\hat{v} + (u^*\chi_v^*\nabla\hat{v} + \chi^*\nabla\hat{u})\cdot\nabla\hat{v}\\
&\quad + \left\{\frac{1}{2}\,u^*\chi_{vv}^*\nabla(\hat{v}^2) + \chi_v^*\nabla(\hat{u}\hat{v})\right\}\cdot\nabla\hat{v} + \cdots\Big],\\
&f(u,v) = f^* + (f_u^*\hat{u} + f_v^*\hat{v}) + \frac{1}{2}(f_{uu}^*\hat{u}^2 + 2f_{uv}^*\hat{u}\hat{v} + f_{vv}^*\hat{v}^2)\\
&\qquad + \frac{1}{6}(f_{uuu}^*\hat{u}^3 + 3f_{uuv}^*\hat{u}^2\hat{v} + 3f_{uvv}^*\hat{u}\hat{v}^2 + f_{vvv}^*\hat{v}^3) + \cdots
\end{aligned} \tag{5.68}$$

- **p.288**
  The matrices $A\vec{\tilde{u}}$ and D were determined above in the linear analysis.
  should be
  The matrices A and D were determined above in the linear analysis.

- **p.289**

$$\begin{aligned}
L\begin{pmatrix} u_2 \\ v_2 \end{pmatrix} &= \omega_1\,\frac{\partial}{\partial T}\begin{pmatrix} u_1 \\ v_1 \end{pmatrix} + \begin{pmatrix} -\alpha(\chi^*\nabla u_1 + u^*\chi_v^*\nabla v_1)\cdot\nabla v_1 \\ 0 \end{pmatrix}\\
&- \begin{pmatrix} \frac{1}{2}f_{uu}^*u_1^2 + f_{uv}^*u_1v_1 D + \frac{1}{2}f_{vv}^*v_1^2 \\ \frac{1}{2}g_{uu}^*u_1^2 + g_{uv}^*u_1v_1 + \frac{1}{2}g_{vv}^*v_1^2 \end{pmatrix} - a_1\begin{pmatrix} (f_u^*)_a & -(\alpha u^*\chi^*)_a\nabla^2 + (f_u^*)_a \\ (g_u^*)_a & (g_v^*)_a \end{pmatrix}\begin{pmatrix} u_1 \\ v_1 \end{pmatrix}
\end{aligned} \tag{5.73}$$

should be

$$L\begin{pmatrix}u_2\\v_2\end{pmatrix}=\omega_1\frac{\partial}{\partial T}\begin{pmatrix}u_1\\v_1\end{pmatrix}+\begin{pmatrix}-\alpha(\chi^*\nabla u_1+u^*\chi_v^*\nabla v_1)\cdot\nabla v_1\\0\end{pmatrix}$$
$$-\begin{pmatrix}\frac{1}{2}f_{uu}^*u_1^2+f_{uv}^*u_1v_1+\frac{1}{2}f_{vv}^*v_1^2\\\frac{1}{2}g_{uu}^*u_1^2+g_{uv}^*u_1v_1+\frac{1}{2}g_{vv}^*v_1^2\end{pmatrix}-a_1\begin{pmatrix}(f_u^*)_a & -(\alpha u^*\chi^*)_a\nabla^2+(f_u^*)_a\\(g_u^*)_a & (g_v^*)_a\end{pmatrix}\begin{pmatrix}u_1\\v_1\end{pmatrix} \tag{5.73}$$

- **p.290**
  Relating this form to (5.62), $\bar{a}_l(T)+a_l(T)\propto B$.
  should be
  Relating this form to (5.62), $\bar{a}_l(T)-a_l(T)\propto B$.

- **p.290**
  the solution amplitude is $|a_l(T)|$.
  should be
  the solution amplitude is $2|a_l(T)|$.

- **p.291**
  Whether or not a stable spatially heterogeneous solution exists depends on the solutions of these amplitude equations as $t\to\infty$.
  should be
  Whether or not a stable spatially heterogeneous solution exists depends on the solutions of these amplitude equations as $T\to\infty$.

- **p.292**
  then we can vary δ and β, and determine α from the first of (5.61).
  should be
  then we can vary δ and β, and determine α from the first of (5.60).

- **p.293** Figure 5.13 caption
  α is determined from equation (5.80).
  should be
  α is determined from the equation below (5.80).

- **p.293**

  $$\beta=\frac{(\sqrt{d_u}+\sqrt{\rho d_v})^2}{\alpha}\frac{(1+\delta)^2}{\delta}$$

  とあるが，(5.80) の下でこの式は成立しない．この系においては，$(u^*,v^*)=(\delta,\beta\delta)$，$\chi^*=1/(1+\beta\delta)^2$，$f_u^*=-\rho\delta$，$f_v^*=0$，$g_u^*=\beta\delta$，$g_v^*=-\delta$，$d_v=1$ であるため，(5.60) に代入すると

  $$\alpha=\frac{(\sqrt{d_u}+\sqrt{\rho d_v})^2\cdot(1+\beta\delta)^2}{\beta\delta}$$

となり，β を分離できない．【それに伴い，図 5.13 が何を描いたものか不明である．】

- **p.294**
  One of the four remaining parameters can be determined from the bifurcation condition (5.58).
  should be
  One of the four remaining parameters can be determined from the bifurcation condition (5.59).

- **p.296**
  With this formulation the unknown parameters are β, δ and μ.
  should be
  With this formulation the unknown parameters are $\bar{\beta}$, $\bar{\delta}$ and μ.

- **p.296**
  Figure 5.15: $\beta \to \bar{\beta}$ (horizontal axis), $w \to \bar{\delta}$ (vertical axis).

- **p.302**
  Linearising equations (5.85) about (5.86) and (5.87) and solving for the eigenvalues, we find that the first steady state is always a focus. For the second to be a focus as well, we must have

$$c \geqq c_{\min} = 2\sqrt{d_u \rho \delta W_0} \tag{5.94}$$

  should be
  Linearising equations (5.85) about (5.86) and (5.87) and solving for the eigenvalues, we find that the first steady state is always a stable node. For the second to be a stable node as well, we must have

$$c \geqq c_{\min} = 2\sqrt{d_u \rho \delta W_0^2/(1+W_0^2)} \tag{5.94}$$

- **p.304**

$$\begin{aligned} H_1 &= \rho\left(\frac{\delta W^2}{1+W^2} - 2U\right) + \alpha\left(\frac{V'}{(1+V)^2}\right)', \\ H_2 &= -\frac{\alpha U k^2}{(1+V)^2} - 2\alpha\left(\frac{UV'}{(1+V)^3}\right)' \end{aligned} \tag{5.94}$$

  should be

$$\begin{aligned} H_1 &= \rho\left(\frac{\delta W^2}{1+W^2} - 2U\right) - \alpha\left(\frac{V'}{(1+V)^2}\right)', \\ H_2 &= -\frac{\alpha U k^2}{(1+V)^2} - 2\alpha\left(\frac{UV'}{(1+V)^3}\right)' \end{aligned} \tag{5.94}$$

Chapter 6

- **p.331**

$$\nabla \cdot \left[(\mu_1 \boldsymbol{\varepsilon}_t + \mu_2 \theta_t \boldsymbol{I}) + (\boldsymbol{\varepsilon} + \nu' \theta \boldsymbol{I}) + (\tau_1 n + \tau_2 \rho + \tau_1 \gamma \nabla^2 \rho)\boldsymbol{I}\right] - s\boldsymbol{u} = 0 \tag{6.27}$$

should be

$$\nabla \cdot \left[(\mu_1 \boldsymbol{\varepsilon}_t + \mu_2 \theta_t \boldsymbol{I}) + (\boldsymbol{\varepsilon} + \nu' \theta \boldsymbol{I}) + (\tau_2 n + \tau_1 \rho + \tau_1 \gamma \nabla^2 \rho) \boldsymbol{I}\right] - s\boldsymbol{u} = 0 \tag{6.27}$$

- **p.338**
  no viscoelastic effects in the ECM.
  should be
  （前略）ECM の粘性効果がない（後略）

- **p.338**

$$c(k^2) = \gamma \tau_1 r k^4 + r(1 - \tau_2)k^2 + rs \tag{6.52}$$

  should be

$$c(k^2) = \gamma \tau_1 r k^4 + r(1 - \tau_1)k^2 + rs \tag{6.52}$$

- **p.343**
  ..., which have dispersion relations with a finite range of unstable wavenumbers ...
  should be
  （前略）不安定な波数の範囲が有界でなく，（後略）

- **p.350**
  An experimental paper by Nagawa and Nakanishi (1987) confirms...
  should be
  An experimental paper by Nogawa and Nakanishi (1987) confirms...

- **p.363**
  looking for solutions proportional to $e^{\sigma t + i\boldsymbol{k}.\boldsymbol{x}}$
  should be
  looking for solutions proportional to $e^{\sigma t + i\boldsymbol{k}\cdot\boldsymbol{x}}$

- **p.363**
  if, for any $k^2 \neq 0$, $a(k^2) \neq 0$ and the coefficients in (6.67) satisfy the inequality
  should be
  if, for any $k^2 \neq 0$, $a(k^2) \neq 0$ and the coefficients in (6.66) satisfy the inequality

- **p.363**
  If $\tau = 0$, then $b(k^2) > 0$ and $c(k^2) > 0$ for all wavelengths k,
  should be
  If $\tau = 0$, then $b(k^2) > 0$ and $c(k^2) > 0$ for all wavenumbers k,

- **p.365**
(these are Figures A.1(d) and (f) in Appendix B, Volume 1).
should be
(these are Figures A.1(d) and (f) in Appendix A, Volume 1).

- **p.367**
see, for example, Nagawa and Nakanishi (1987)
should be
see, for example, Nogawa and Nakanishi (1987)

- **p.372**
where L is some appropriate characteristic length scale and c_3 is the largest zero of $R(c)$ as in Figure 6.25(b).
should be
where L is some appropriate characteristic length scale and c_3 is the largest zero of $R(c)$ as in Figure 6.25(a).

- **p.373**
recall the discussion in Section 13.6 on postfertilization waves on eggs.
recall the discussion in Section 13.6, Volume I on postfertilization waves on eggs.

- **p.376**
We should interject here, that Nagawa and Nakanishi (1987) comment that
We should interject here, that Nogawa and Nakanishi (1987) comment that

- **p.376** (σ_0 is defined as the negative constant stress below)
$$\sigma_0 = \frac{\pi}{1+\varepsilon}$$
should be
$$\sigma_o = \frac{\pi}{1+\varepsilon}$$

- **p.376** (σ_0 is defined as the negative constant stress below)
$$\sigma_x = [\sigma_0 + \sigma_E + \sigma_A + \sigma_V]_x = 0,$$
$$\sigma = \underbrace{\frac{\pi}{1+\varepsilon}}_{\text{osmotic}} - \underbrace{GE(\varepsilon - \beta\varepsilon_{xx})}_{\text{elastic}} - \underbrace{\frac{G\tau(c)}{1+\varepsilon^2}}_{\text{active stress}} - \underbrace{G\mu\varepsilon_t}_{\text{viscous}}. \tag{6.84}$$
should be
$$\sigma_x = [\sigma_o + \sigma_E + \sigma_A + \sigma_V]_x = 0,$$
$$\sigma = \underbrace{\frac{\pi}{1+\varepsilon}}_{\text{osmotic}} - \underbrace{GE(\varepsilon - \beta\varepsilon_{xx})}_{\text{elastic}} - \underbrace{\frac{G\tau(c)}{1+\varepsilon^2}}_{\text{active stress}} - \underbrace{G\mu\varepsilon_t}_{\text{viscous}}. \tag{6.84}$$

- **p.380**

$$\begin{aligned} &\mathrm{Re}\,\lambda(0) < 0 \quad \Rightarrow \quad b(0) > 0, \quad d(0) > 0 \\ &\mathrm{Re}\,\lambda(k) > 0 \quad \Rightarrow \quad b(k) < 0 \quad > \text{and/or} \quad d(k) < 0 \quad \text{for some} \quad k \neq 0. \end{aligned} \tag{6.95}$$

should be

$$\begin{aligned} &\mathrm{Re}\,\lambda(0) < 0 \quad \Rightarrow \quad b(0) > 0, \quad d(0) > 0 \\ &\mathrm{Re}\,\lambda(k) > 0 \quad \Rightarrow \quad \begin{cases} b(k) < 0 \\ b(k) > 0 \quad \text{and} \quad d(k) < 0 \end{cases} \quad \exists k \neq 0. \end{aligned} \tag{6.95}$$

- **p.389**
  They suggested that a specific factor produced by the L-CAM positive dermal cells,
  should be
  They suggested that a specific factor produced by the L-CAM positive epidermal cells,

Chapter 8

- **p.424**

$$\boldsymbol{\sigma}_{\text{matrix}} + \boldsymbol{\sigma}_{\text{viscous}} + \boldsymbol{\sigma}_{\text{elastic}} = \mu_1 \boldsymbol{\varepsilon}_t + \mu_2 \theta_t \boldsymbol{I} + E'(\boldsymbol{\varepsilon} + \nu\theta \boldsymbol{I}) \tag{8.5}$$

should be

$$\boldsymbol{\sigma}_{\text{基質}} = \boldsymbol{\sigma}_{\text{粘性}} + \boldsymbol{\sigma}_{\text{弾性}} = \mu_1 \boldsymbol{\varepsilon}_t + \mu_2 \theta_t \boldsymbol{I} + E'(\boldsymbol{\varepsilon} + \nu\theta \boldsymbol{I}) \tag{8.5}$$

- **p.425**

$$\boldsymbol{u}(x, y = a, t) = \boldsymbol{u}(x, y = b, t) = \boldsymbol{u}(x = a, y, t) = \boldsymbol{u}(x = b, y, t) = 0 \tag{8.8}$$

should be

$$\boldsymbol{u}(x = 0, y, t) = \boldsymbol{u}(x = a, y, t) = \boldsymbol{u}(x, y = 0, t) = \boldsymbol{u}(x, y = b, t) = 0 \tag{8.8}$$

- **p.426**
  Depending on the sign of

$$\Delta = \sqrt{b^2(k^2) - 4(\mu k^2 + s)c(k^2)} \tag{8.19}$$

  the solutions given by (8.14) can be real or complex.
  should be
  以下で定義される Δ の符号により，式 (8.18) で与えられる解は実数にも複素数にもなりうる：

$$\Delta = b^2(k^2) - 4(\mu k^2 + s)c(k^2). \tag{8.19}$$

- **p.431**
  Parameter Domain $\tau_1 < 2(1+\nu)$, $sD > 1 + \nu$: Region II
  should be
  領域 II：パラメータ領域 $\tau_1 < 2(1+\nu)$, $\tau_1 < sD + 1 + \nu$

- **p.431**
  If $sD > 1 + \nu$ the coefficient of the $O(k^2)$ term is always positive ...
  should be
  もし $\tau_1 < 2(1+\nu) \wedge \tau_1 < sD + 1 + \nu$ であれば，$O(k^2)$ の項の係数が常に正ゆえ，$\cdots$

- **p.431**
  Parameter Domain $\tau_1 < 2(1+\nu), sD < 1 + \nu$: Region III
  should be
  領域 III：パラメータ領域 $1 + \nu + \sqrt{sD\{2(1+\nu) - sD\}} < \tau_1 < 2(1+\nu)$

- **p.431**
  the dispersion relation, σ_1, from (8.18) is complex for wavenumbers $k_1^2 < k^2 < k_2^2$
  should be
  $k_2^2 < k^2 < k_1^2$ をみたす波数 k^2 に対して，式 (8.18) の分散関係 σ_1 は複素数である

- **p.431**
  Parameter Domain $\tau_1 < 2(1+\nu), sD < 2(1+\nu)$: Region IV
  should be
  領域 IV：パラメータ領域 $sD + 1 + \nu < \tau_1 < 1 + \nu + \sqrt{sD\{2(1+\nu) - sD\}}$

- **p.432**

  表 2　図 8.2 で示した領域 I, II, III, IV におけるパラメータの条件と，形成される空間パターン．パラメータ $\tau_1 = \tau(1 - \alpha n_0^2)^2$ であり，$\tau_a = 2(1+\nu)$, $\tau_b = 1 + \nu + \sqrt{sD\{2(1+\nu) - sD\}}$, $\tau_c = 1 + \nu + sD$.

領域	パラメータの範囲	線形解析における解の振舞い
I	$\tau_a < \tau_1$	任意の非零の波数が指数関数的に成長
II	$\tau_a > \tau_1$ $\tau_c > \tau_1$	パターンは形成されない
III	$\tau_b < \tau_1 \leq \tau_a$ $sD < 1 + \nu$	一部の波数が励起（そのうち一部は励起振動）
IV	$\tau_c < \tau_1 \leq \tau_b$ $sD < 1 + \nu$	一部の波数が励起振動

- **p.436**
  In dimensional terms this condition is given by (8.19) in which the matrix thickness, namely, ρ_0, does not appear.
  should be
  無次元化前の項ではこの条件は式 (8.21) で与えられるが，その中には基質の厚さ ρ_0 は現れない．

- **p.438**

Using the vector relation $\nabla \cdot \boldsymbol{\varepsilon} = \text{grad div } \boldsymbol{u} - (1/2)\text{curl curl } \boldsymbol{u}$ ...
should be
公式 $\nabla \cdot \boldsymbol{\varepsilon} = \text{grad div } \boldsymbol{u} - \text{curl curl } \boldsymbol{u}$ を用いて…

Chapter 9

- **p.456**

$$\begin{aligned}\zeta &= \int_{1/2}^{N_0} \frac{d\xi}{\psi(\xi)} \\ &= \left(\frac{1}{2h-1}\right)\ln(2N_0) - \left(\frac{2h-1}{3h-2}\right)\ln[2(1-N_0)] \\ &\quad + \frac{(4h-3)(h-1)}{(2n-1)(3h-2)}\ln\left[\frac{2(h-1)N_0+2(2h-1)}{5h-3}\right]\end{aligned}$$

should be

$$\begin{aligned}\zeta &= \int_{1/2}^{N_0} \frac{d\xi}{\psi(\xi)} \\ &= \left(\frac{1}{2h-1}\right)\ln(2N_0) - \left(\frac{2h-1}{3h-2}\right)\ln[2(1-N_0)] \\ &\quad + \frac{(4h-3)(h-1)}{(2h-1)(3h-2)}\ln\left[\frac{2(h-1)N_0+2(2h-1)}{5h-3}\right]\end{aligned}$$

- **p.477**
From (9.46) and the form of $P(u_x)$, if $E+\Gamma > 1/(1-\beta)$ there is a unique monotonically decreasing solution of (9.42) subject to (9.44)
should be
$E+\Gamma > 1/(1-\beta)$ の場合，式 (9.45) と $P(u_x)$ の形より，方程式 (9.42)（条件 (9.44) の下で）の単調減少解が唯一つ存在する．

- **p.477**
$q_+ < p_{\max} < q_+$ *should be* $q_- < p_{\max} < q_+$

- **p.477**
$u \in [0, P(p_{\max})]$ *should be* $u \in [0, \sqrt{2P(p_{\max})/\lambda}]$

- **p.482**
and used the approximation $\Delta \approx \nabla \cdot \boldsymbol{u}$.
should be
近似 $\Delta \approx -\nabla \cdot \boldsymbol{u}$ を用いることで，

- **p.482**
If we consider a small infinitesimal rectangle whose sides are oriented along the principal axes of the local two-dimensional stress tensor $\boldsymbol{\epsilon}$, a deformation changes the rectangle into another rectangle.

should be
局所的な 2 次元歪みテンソル $\boldsymbol{\epsilon}$ の主軸に両辺が平行な無限小の長方形を考えると，この長方形は変形によって異なる長方形となる．

- **p.485**
  $F(\phi;\sigma_1/\sigma_2) = F((1/2)\pi - \phi;\sigma_1/\sigma_2)$ *should be* $F(\phi;\sigma_1/\sigma_2) = F((1/2)\pi - \phi;\sigma_2/\sigma_1)$

Chapter 10

- **p.494**
  The former are almost guaranteed to occur in severe burn wounds (Kisher et al. 1982).
  should be
  重症の熱傷においては，前者がほぼ必発である (Kischer et al. 1982).

- **p.510**
  The models we have discussed in this section crucially included some viscoplasticity effects which
  should be
  本節で議論してきたモデルは，非常に重要なことに，ある弾塑性効果を含んでいた．

- **p.515**
  the effective strain is equal to the actual strain, here denoted by e_{ij}, minus the effective strain, z_{ij}.
  should be
  (前略) 有効歪みは実際の歪み e_{ij} から残留歪み z_{ij} を差し引いたものに等しい．

- **p.516**

$$\frac{D\Lambda}{Dt} = f(\Lambda) \tag{10.27}$$

  should be

$$\frac{D\Lambda_i}{Dt} = f(\Lambda_i) \tag{10.27}$$

- **p.516**

$$\boldsymbol{P}^T\boldsymbol{M}^T\boldsymbol{Z}(t)\boldsymbol{M}\boldsymbol{P} = \boldsymbol{\Lambda}(t)^T \tag{10.28}$$

  should be

$$\boldsymbol{P}^T\boldsymbol{M}^T\boldsymbol{Z}(t)\boldsymbol{M}\boldsymbol{P} = \boldsymbol{\Lambda}(t) \tag{10.28}$$

- **p.516**

... and the density of collagen added to existing fibres is $(1-q(S))(dS/dt)dt$ where $\frac{\partial S}{\partial t}$ is the local secretion rate.

should be

（前略）既存の線維に追加されたコラーゲンの密度増加分は $(1-q(S))(dS/dt)dt$ である．ただし dS/dt は局所的な基質分泌率を表している．

- **p.517**

$$\frac{Dl_i}{Dt} = \frac{q(S)}{S}\frac{\partial S}{\partial t}(1-l_i) \tag{10.35}$$

should be

$$\frac{Dl_i}{Dt} = \frac{q(S)}{S}\frac{dS}{dt}(1-l_i) \tag{10.35}$$

- **p.519**

$$m^{sj}\Delta\left[\left(\frac{N}{\Delta}\right)_{,r} m^{rj}\right]_{,s} = \left[m^{ik}m^{jk}N_{,j} - m^{ik}m^{jk}\frac{\Delta_{,j}}{\Delta}N\right]_{,j} \tag{10.46}$$

should be

$$m^{sj}\Delta\left[\left(\frac{N}{\Delta}\right)_{,r} m^{rj}\right]_{,s} = \left[m^{ik}m^{jk}N_{,j} - m^{ik}m^{jk}\frac{\Delta_{,j}}{\Delta}N\right]_{,i} \tag{10.46}$$

- **p.521**

$$\frac{\partial N}{\partial t} = -\nabla\cdot\boldsymbol{J} = [DD_{ij}N]_{,ij} \tag{10.55}$$

should be

$$\frac{\partial N}{\partial t} = -\nabla\cdot\boldsymbol{J} = [D_{ij}N]_{,ij} \tag{10.55}$$

Chapter 11

- **p.536**
  Practica Chirugiae *should be* *Practica Chirurgiae*

- **p.537**
  Cinotto (1969) *should be* Cinotti (1969)

- **p.545**

$$\boldsymbol{n}\cdot\bar{D}(\bar{\boldsymbol{x}})\bar{\nabla}\bar{c} = 0 \quad \text{for } \boldsymbol{x} \text{ on } \partial B \tag{11.8}$$

should be

$$\partial B \text{ 上の } \bar{\boldsymbol{x}} \text{について} \quad \boldsymbol{n} \cdot \bar{D}(\bar{\boldsymbol{x}}) \bar{\nabla} \bar{c} = 0 \tag{11.8}$$

- **p.548**

$$\begin{aligned} \text{survival time} &= \bar{t}_{\text{lethal}} - \bar{t}_{\text{detect}} \\ &\approx \frac{1}{\sqrt{D\rho}} (\bar{r}_{\text{lethal}} - \bar{r}_{\text{detect}}) \end{aligned}$$

should be

$$\begin{aligned} \text{survival time} &= \bar{t}_{\text{lethal}} - \bar{t}_{\text{detect}} \\ &\approx \frac{1}{2\sqrt{D\rho}} (\bar{r}_{\text{lethal}} - \bar{r}_{\text{detect}}) \end{aligned}$$

- **p.549**
An establishment phase only exists for $\psi > 1$.
should be
確立相は $\psi > e$ の場合にのみ存在する．

- **p.549**
note that the minimum is at $t_e = e$
should be
$t_e = 1$ のときに最小値 e をとる

- **p.550**
In this situation ... $\bar{D}(\bar{x}) = D$
should be
今回の実験の状況下では（中略）$\bar{D}(\bar{\boldsymbol{x}}) = D$ である．

- **p.553**

$$\langle r \rangle = \frac{\int_0^\infty r^2 c(r,t) dr}{\int_0^\infty r c(r,t) dr} = \int_0^\infty r^2 c(r,t) dr \tag{11.25}$$

should be

$$\langle r \rangle = \frac{\int_0^\infty r^2 c(r,t) dr}{\int_0^\infty r c(r,t) dr} = \frac{2}{\lambda^2} \int_0^\infty r^2 c(r,t) dr \tag{11.25}$$

- **p.554**

$$\langle r \rangle = 2\pi \int_0^\infty r^2 c(r,t) dr \to 2\pi \int_0^1 \lambda^2 r^2 dr = \frac{2\pi}{3} \lambda^2 \tag{11.28}$$

should be

$$\langle r \rangle = \frac{2}{\lambda^2} \int_0^\infty r^2 c(r,t) dr \to \frac{2}{\lambda^2} \int_0^1 \lambda^2 r^2 dr = \frac{2}{3} \tag{11.28}$$

- **p.554**
  In Figure 11.7, ... the asymptotic expansion (11.26) overestimates the mean radius for $\bar{t} > 96$ hours.
  should be
  図 11.7 を見ると，（中略）$\bar{t} > 96$ 時間 では，漸近式 (11.30) からの値が実際の平均半径よりも過剰に大きくなることがわかる．

- **p.561**
  In the preliminary simulations the corpus callosum is connected to the grey matter cortex by white matter fibres radiating from the corpus callosum, represented by the boomerang shape, as shown in Figure 11.10(a)–(d).
  should be
  予備的なシミュレーションでは，図 11.11(a)–(d) に示すように，ブーメラン型をした脳梁と灰白質皮質とが，脳梁から放射状に伸びる白質線維により接続されている．

- **p.568**
  Although the tumour looks fairly localized, by increasing our detection abilities by a factor of 20 ..., we see in Figure 11.15(c) that the tumour has dramatically invaded throughout the right cerebral lobe and across the corpus callosum to the contralateral hemisphere. After 140 days, Figure 11.15(b) represents the portion of the tumour detectable on enhanced CT at the time of death.
  should be
  検出能を 20 倍高め（数学的には，閾値は任意の正の値に設定できる），$1\,\mathrm{cm}^2$ あたり 500 個の細胞が検出できる状態にすると，図 11.15(b) のように，右脳葉を越えて，脳梁を横切り，反対側の半球にまで劇的に腫瘍が浸潤しているのがわかる．140 日後，患者が死亡したときに撮られた造影 CT における，検出可能な腫瘍の部分を図 11.15(c) に示す．

- **p.572**

  $$\text{survival time} \approx \frac{1}{\sqrt{D\rho}}(\bar{r}_{\text{lethal}} - \bar{r}_{\text{detect}}) \tag{11.39}$$

  should be

  $$\text{生存期間} \approx \frac{1}{2\sqrt{D\rho}}(\bar{r}_{\text{lethal}} - \bar{r}_{\text{detect}}) \tag{11.39}$$

- **p.572**
  We get an estimate of between 170 days and 380 days.
  should be
  式 (11.39) を用いると，生存期間の推定値は 85 日から 190 日となる．

- **p.572**
  For a low grade tumour ... we get between 1698 days and 3798 days.
  should be
  グレードが低い腫瘍の場合，（中略）生存期間の推定値は 849 日から 1899 日となる．

- **p.572**

  The lower of these survival times is reasonably close to the values given in Table 11.6 for a high and low grade tumour in Position 3.

  should be

  これらの推定値の上限の値は，表 11.6 の値（位置 3 に存在する高グレード腫瘍および低グレード腫瘍の生存期間の値）とかなり近い．

- **p.584**

  Figure 11.22 is wrong. It needs correction to be consistent with Woodward et al. (1996).

- **p.584**

  Spatially homogeneous model projected increase in survival time following various extents of resection. (From Woodward et al. 1995)

  should be

  空間的に均一なモデルにおいて，様々な範囲で外科的切除を行うと，生存期間の延長が見られた．（Woodward et al. (1996) より．）

- **p.585**

  We consider the tumour was initiated by a point source of N cells at the origin and so the pre-resection problem satisfies (11.38) for $0 < t < t_r$, ...

  should be

  原点に N 個の細胞が存在する状況から腫瘍形成が始まると考えるので，外科的切除を行う前の問題は $0 < t < t_r$ において式 (11.40) をみたす．

- **p.585**

  At resection, a central core of radius R_r is removed, so the post-resection problem satisfies (11.38) for $t > t_r$ with initial conditions $(t = t_r)$,...

  should be

  外科的切除後の問題は $t > t_r$ において式 (11.40) をみたし，初期条件 $(t = t_r)$ は（後略）

- **p.585**

$$
\begin{aligned}
c_{\text{postresect}}(r,\theta,t_r) &= F(r,\theta) \\
&= N H(r-R_r)\, c_{\text{preresect}}(r,\theta,t_r) \\
&= H(r-R_r)\,\frac{N}{4\pi t_r}\exp\left(t_r - \frac{r^2}{4t_r}\right)
\end{aligned}
\tag{11.42}
$$

  should be

$$
\begin{aligned}
c_{\text{切除後}}(r,\theta,t_r) &= F(r,\theta) \\
&= H(r-R_r)\, c_{\text{切除前}}(r,\theta,t_r) \\
&= H(r-R_r)\,\frac{N}{4\pi t_r}\exp\left(t_r - \frac{r^2}{4t_r}\right)
\end{aligned}
\tag{11.42}
$$

- **p.585**
where K is the fundamental solution of (11.38) for a point source at $(r, \theta) = (\xi, \alpha)$ introduced at $t = t_r$, ...
should be
ここで K は，$t = t_r$ において $(r, \theta) = (\xi, \alpha)$ に腫瘍の点発生源がある場合の式 (11.40) の基本解であり（後略）

- **p.586**
Rescaling near $v = 0$ we have, for large A,
$$\mathcal{I} = 2\int_0^{\varepsilon} e^{A(1-(v^2/2)\cdots)}dv \sim e^A \int_{-\infty}^{\infty} e^{-A(v^2/2)}dv \sim e^A\sqrt{\frac{2\pi}{A}}.$$
should be
$v = 0$ の近傍でリスケーリングすると，A が大きなとき
$$\mathcal{I} \sim 2\int_0^{\varepsilon} e^{A(1-(v^2/2)\cdots)}dv \sim e^A \int_{-\infty}^{\infty} e^{-A(v^2/2)}dv = e^A\sqrt{\frac{2\pi}{A}}$$
となる．

- **p.587**
Introducing a new variable $w = \xi - (rt_r/r)$ and expanding for large x gives ...
should be
新たな変数 $w = \xi - (rt_r/t)$ を導入し，大きな x について展開すると（後略）

- **p.587**
From the asymptotic solution (11.43) we can deduce how the invading front of tumour cells has been slowed down as a consequence of resection.
should be
漸近解 (11.46) より，外科的切除の結果として，腫瘍細胞の先頭が浸潤する速度がどれほど遅くなるのかを評価できる．

- **p.589**
... with $c(\boldsymbol{x}, t_r) = F(\boldsymbol{x})$, the initial distribution of cells after resection and $\boldsymbol{n} \cdot D(\boldsymbol{x})\nabla = 0$ for x on ∂B (the boundary of the brain).
should be
外科的切除後の細胞の初期分布は $c(\boldsymbol{x}, t_r) = F(\boldsymbol{x})$ であり，∂B（脳の境界）上の $\boldsymbol{x}$ について $\boldsymbol{n} \cdot D(\boldsymbol{x})\nabla c = 0$ である．

- **p.594**

表 7　高グレードと 2 種類の中程度グレードの腫瘍に対して肉眼的全摘術を行った際の，切除された腫瘍体積の割合と生存期間を，全ての位置について示す．(Swanson (1999) より．)

位置	ρ(/日)	D(cm^2/日)	切除された腫瘍の比率 %	生存期間（日）
1	1.2×10^{-2}	1.3×10^{-3}	36.9	127.3
	1.2×10^{-2}	1.3×10^{-4}	95.5	420.8
	1.2×10^{-3}	1.3×10^{-3}	12.5	129.6
2	1.2×10^{-2}	1.3×10^{-3}	41.3	169.0
	1.2×10^{-2}	1.3×10^{-4}	92.9	525.5
	1.2×10^{-3}	1.3×10^{-3}	13.1	462.9
3	1.2×10^{-2}	1.3×10^{-3}	48.3	185.6
	1.2×10^{-2}	1.3×10^{-4}	95.8	613.9
	1.2×10^{-3}	1.3×10^{-3}	15.9	486.1

表 8　高グレードと 2 種類の中程度グレードの腫瘍に対して広範囲切除術を行った際の，切除された腫瘍体積の割合と生存期間を，全ての位置について示す．(Swanson (1999) より．)

位置	ρ(/日)	D(cm^2/日)	切除された腫瘍の比率 %	生存期間（日）
1	1.2×10^{-2}	1.3×10^{-3}	86.7	253.7
	1.2×10^{-2}	1.3×10^{-4}	99.9	868.5
	1.2×10^{-3}	1.3×10^{-3}	55.7	1078.7
2	1.2×10^{-2}	1.3×10^{-3}	92.4	337.0
	1.2×10^{-2}	1.3×10^{-4}	99.9	945.0
	1.2×10^{-3}	1.3×10^{-3}	44.2	1046.3
3	1.2×10^{-2}	1.3×10^{-3}	96.2	438.0
	1.2×10^{-2}	1.3×10^{-4}	99.8	985.6
	1.2×10^{-3}	1.3×10^{-3}	52.8	1078.7

- **p.599**
  The times, $t_{1,1}$, $i = 1, 10$ and $t_{2,j}$, $j = 1, 4$, are directly related to those given in Figure 11.29.
  should be
  時刻 $t_{1,i}$, $i = 1, \ldots, 10$ と $t_{2,j}$, $j = 1, \ldots, 4$ は図 11.29 に与えられた時刻と直接対応している．

- **p.602**
  However, the sawtoothlike shape of the curve in Figure 11.30, resulting from the successive treatments, is sensitive ...
  should be
  しかしながら，治療を繰り返す結果として生じる図 11.29 の鋸歯状の曲線は（後略）

Chapter 12

- **p.620**
  which, as is clear from Figure 12.3(c), gives an infinite range of unstable wavenumbers to the right of k_0 where $W(k) = 0$.
  should be
  このとき図 12.3(c) から明らかなように，不安定化する波数の範囲が，$W(k_0) = 0$ なる k_0 の右側に無限に広がる．

- **p.620**
  we can expand $n(x-z)$ in a Taylor series to get
  should be
  $n(x+z)$ をテイラー級数へと展開して

- **p.623**

$$\begin{aligned} w_{RR} * n_R &= \int_D n_R(|\boldsymbol{r}-\boldsymbol{r}^*|)w_{RR}(\boldsymbol{r}^*)d\boldsymbol{r}^*, \\ w_{LR} * n_L &= \int_D n_L(|\boldsymbol{r}-\boldsymbol{r}^*|)w_{LR}(\boldsymbol{r}^*)d\boldsymbol{r}^*, \quad s_R = w_{RR} * n_R + w_{LR} * n_L. \end{aligned} \tag{12.19}$$

  should be

$$\begin{aligned} w_{RR} * n_R &= \int_D n_R(\boldsymbol{r}^*)w_{RR}(|\boldsymbol{r}-\boldsymbol{r}^*|)d\boldsymbol{r}^*, \\ w_{LR} * n_L &= \int_D n_L(\boldsymbol{r}^*)w_{LR}(|\boldsymbol{r}-\boldsymbol{r}^*|)d\boldsymbol{r}^*, \quad s_R = w_{RR} * n_R + w_{LR} * n_L. \end{aligned} \tag{12.19}$$

- **p.626**

$$\lambda = \frac{1}{2}N^2 W_a(k), \quad W_a(k) = \int_D w_a(\boldsymbol{r}-\boldsymbol{r}^*|)\exp[i\boldsymbol{k}\cdot\boldsymbol{r}^*]d\boldsymbol{r}^* \tag{12.25}$$

  should be

$$\lambda = \frac{1}{2}N^2 W_a(k), \quad W_a(k) = \int_D w_a(|\boldsymbol{r}-\boldsymbol{r}^*|)\exp[i\boldsymbol{k}\cdot\boldsymbol{r}^*]d\boldsymbol{r}^* \tag{12.25}$$

- **p.626**
  since w_a is similar to $W(k)$ there.
  should be
  なぜなら，w_a が図 12.3 の $w(x)$ と類似しているためである．

- **p.632**

$$
\begin{aligned}
w_{EE} * E &= \int_D w_{EE}(|\boldsymbol{r} - \boldsymbol{r}^*) \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}^*] d\boldsymbol{r}^* \\
&= \exp[\lambda t] \int_D w_{EE}(|\boldsymbol{u}|) \exp[i\boldsymbol{k} \cdot \boldsymbol{u} + i\boldsymbol{k} \cdot \boldsymbol{r}] d\boldsymbol{u} \\
&= \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}] \int_D w_{EE}(|\boldsymbol{u}|) \exp[i\boldsymbol{k} \cdot \boldsymbol{u}] d\boldsymbol{u} \\
&= W_{EE}(\boldsymbol{k}) \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}]
\end{aligned} \tag{12.34}
$$

should be

$$
\begin{aligned}
w_{EE} * E &= \int_D w_{EE}(|\boldsymbol{r} - \boldsymbol{r}^*|) \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}^*] d\boldsymbol{r}^* \\
&= \exp[\lambda t] \int_D w_{EE}(|\boldsymbol{u}|) \exp[i\boldsymbol{k} \cdot \boldsymbol{u} + i\boldsymbol{k} \cdot \boldsymbol{r}] d\boldsymbol{u} \\
&= \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}] \int_D w_{EE}(|\boldsymbol{u}|) \exp[i\boldsymbol{k} \cdot \boldsymbol{u}] d\boldsymbol{u} \\
&= W_{EE}(\boldsymbol{k}) \exp[\lambda t + i\boldsymbol{k} \cdot \boldsymbol{r}]
\end{aligned} \tag{12.34}
$$

- **p.634**

$$
\exp i[k_c x], \quad \exp[k_c y], \quad \exp[k_c(y \cos\phi + x \sin\phi)] \tag{12.41}
$$

should be

$$
\exp i[k_c x], \quad \exp i[k_c y], \quad \exp i[k_c(y \cos\phi + x \sin\phi)] \tag{12.41}
$$

- **p.635**

$$
\begin{aligned}
\begin{pmatrix} E(x,y) \\ I(x,y) \end{pmatrix} &= \{\cos[a + k_c r \sin(\theta + \pi/6)] \\
&\quad + \cos[b + k_c r \sin(\theta - \pi/6)] + \cos[c + k_c r \cos(\theta - \pi/6)]\}\boldsymbol{V}(p_c, k_c^2)
\end{aligned} \tag{12.47}
$$

should be

$$
\begin{aligned}
\begin{pmatrix} E(x,y) \\ I(x,y) \end{pmatrix} &= \{\cos[a + k_c r \sin(\theta + \pi/6)] \\
&\quad + \cos[b + k_c r \sin(\theta - \pi/6)] + \cos[c + k_c r \cos\theta]\}\boldsymbol{V}(p_c, k_c^2)
\end{aligned} \tag{12.47}
$$

- **p.638**
  (b) Citarium pica; (c) Conus textus;
  should be
  (b) チャウダーガイ（*Cittarium pica*），(c) ベニシリダカ（*Tectus conus*），

- **p.644**
  Unlike previous models, the time variation in the solutions is discrete and so linear stability here requires$|\lambda(k)| < 1$ (recall the analysis in Chapter 2).
  should be
  以前のモデルたちと異なり，このモデルでは時刻が離散的であるので，線形安定なる必要十分条件は $|\lambda(k)| < 1$ である（入門編第 2 章を思い出されたい）.

- **p.644**
  That is, for the solutions (12.62) to be stable for all k, $\lambda(k)$ from (12.67) must lie within the unit circle in the complex λ-plane.
  should be
  すなわち，式 (12.63) の形の解が安定であるためには，式 (12.67) から求まる $\lambda(k)$ が，複素平面上の単位円の内部になければならない

- **p.646**
  From (12.61) and (12.62), *should be* 式 (12.61), (12.63) より

- **p.646**

$$P_{t+1}(x) - P_0 \propto \lambda^t(0) \tag{12.71}$$

  should be

$$P_{t+1}(x) - P_0 \propto \lambda^t \tag{12.71}$$

- **p.647**
  Now from (12.61) and (12.62),
  should be
  式 (12.61), (12.63) より

- **p.647**

$$-L^*(k) > \max\left[\delta, \frac{\gamma}{d}\right] \quad \text{for} \quad 0 < k_1 < k < k_2 \tag{12.72}$$

  should be

$$-L^*(k) > \max\left[\delta, \frac{\gamma}{\delta}\right] \quad \text{for} \quad 0 < k_1 < k < k_2 \tag{12.72}$$

- **p.645–648**
  From Figure 12.19(c), which was obtained from an analysis of (12.68), we see that this occurs if both $a(k) < 0$ and $b(k) < 0$ and the point (a, b) crosses the bifurcation line in the (a, b) plane in the 3rd quadrant. …… Many shells exhibit such abrupt pattern changes; see the example in Figure 12.22(d).
  should be
  (本箇所の議論には多数の誤りが散在していると思われるため，以下の訳注を設ける.)
  λ が 1 を通過する必要十分条件は，点 (a, b) が三角形領域の「左下の辺」を横切ることである（$b(k) < 0$ は必要でない）. 式 (12.69) の主張は $b(k) < 0$ の仮定の下では正しいが，この仮定に意義はない. また，以降で行われる「式 (12.69) が成り立つならば固有関数が成長する」という議論にも誤りが含まれる.
  本小節の出典である Ermentrout et al. (1986) の内容を踏まえた上で，修正を行った議論を以下に述べる.
  (i) 分岐の際に $\lambda = 1$ を通過する場合
  λ が 1 を通過する必要十分条件は，図 12.19 において点 (a, b) が軌跡 B のように三角形領域の左下の辺を横切

ることであり，すなわち $a+b+1<0$ となることである．a,b の定義式（(12.67) 参照）を代入すると，この条件は

$$L^* > (1-\delta+\gamma)/(1-\delta) \tag{12.69'}$$

と同値であることがわかる．このような分岐が起こった後には，ある範囲の k についてこの条件がみたされるようになる．このとき，図 12.21(b) のように，規則的な間隔をもつ静的な縞状パターンが得られる．

(ii) 分岐の際に $\lambda=-1$ を通過する場合

λ が -1 を通過する必要十分条件は，図 12.19 において点 (a,b) が軌跡 A のように三角形領域の右下の辺を横切ることであり，すなわち $-a+b-1<0$ となることである．a,b の定義式を代入すると，この条件は

$$L^* < -(1+\delta+\gamma)/(1+\delta) \tag{12.72'}$$

と同値であることがわかる．$L^*(k)$ の概形より（図 12.20(a) 参照），この条件が最初に成立するようになるのは必ず $k=0$ のときであるため，一様なパターンが発展する．しかし λ^t の符号が 1 タイムステップごとに反転するため，規則的な間隔をもつ水平な縞が得られる．

(iii) 分岐の際に $\lambda=\exp[i\phi]$ $(\phi\neq 0,\pi)$ を通過する場合

λ が $\exp[i\phi]$ を通過する必要十分条件は，図 12.19 において点 (a,b) が軌跡 C のように三角形領域の上の辺を横切ることであり，すなわち $b-1>0$ となることである．b の定義式を代入すると，この条件は

$$L^* > (1-\gamma)/\delta \tag{12.75'}$$

と同値であることがわかる．この場合には，図 12.21 (c) のような時間空間的パターン（斜めの縞や市松模様）が得られる．

なお，$(1-\gamma)/\delta > 1+\gamma/(1-\delta)$ は $\delta < 1-\sqrt{\gamma}$ と同値である．ゆえに，$+1$ での分岐が複素固有値での分岐よりも先に生じる必要十分条件は $\delta < 1-\sqrt{\gamma}$ である．

- **p.653**

  Not only that, in (12.83) we tacitly assumed that $D=M_2$ is positive.

  should be

  それだけでなく，我々は式 (12.82) 以降，暗黙のうちに $D=M_2$ が正であるものと仮定していた．

- **p.654**

$$\frac{\partial P}{\partial t} = S(M_0P) - R - P - D_1\frac{\partial^2 P}{\partial x^2} - D_2\frac{\partial^4 P}{\partial x^4}, \tag{12.87}$$
$$\frac{\partial P}{\partial t} = \gamma P - (1-\delta)R = g(P,R) \tag{12.88}$$

  should be

$$\frac{\partial P}{\partial t} = S(M_0P) - R - P - D_1\frac{\partial^2 P}{\partial x^2} - D_2\frac{\partial^4 P}{\partial x^4}, \tag{12.87}$$
$$\frac{\partial R}{\partial t} = \gamma P - (1-\delta)R = g(P,R) \tag{12.88}$$

- **p.656**

  mescal bean (*Sophora secondiflora*) *should be* メスカルビーン (*Sophora secundiflora*)

Chapter 13

- **p.664**

  By linearising the second equation of (13.5) as $z \to \infty$, where $S = 1 - s$, with s small, we have

  $$s'' + cs' - I = 0,$$

  should be

  式 (13.5) の第 2 式を $z \to \infty$ で線形化し，$S = 1 - s$ とおくと，s を微小量として，

  $$s'' + cs' + I = 0$$

  が得られる．

- **p.672**

  The Center for Disease Control (CDC) in Atlanta recommend booster injections on days 0, 7, 28 and 365 for people in exposed areas;

  should be

  アトランタにあるアメリカ疾患管理予防センター (Centers for Disease Control and Prevention, CDC) は，流行地の住人には 7, 28, 365 日後に補強注射を行うことを推奨している．

- **p.687**

  Further, if (13.36) holds, then $f(0) > 0$ and f has a negative slope at $\lambda = 0$.

  should be

  さらに，式 (13.34) が成り立てば $f(0) > 0$ であり，また $f(\lambda)$ は $\lambda = 0$ で負の傾きをもつ．

- **p.687**

  After considerably more algebra we find that, to first-order in ε and δ, v_c is given by the positive real roots of $g(v_c^2)$, ...

  should be

  かなり長い計算により，ε, δ について 0 次で近似して，v_c は $g(v_c^2)$ の正の実数根で与えられることがわかる．

- **p.688**

  $$\boldsymbol{a}^T = \left[0, \frac{d - \mu - \delta}{\mu} - \mu + \delta)^2 \mu v^2, 1, -\frac{\mu + \delta}{v}\right],$$
  $$\boldsymbol{b}^T = \left[0, 0, 1, \frac{v}{2} \pm \left(d + \frac{v^2}{4}\right)^{1/2}\right], \quad \boldsymbol{c}^T = [1, 0, 0, 0]$$

  should be

  $$\boldsymbol{a}^T = \left[0, \frac{d - \mu - \delta}{\mu} - \frac{(\mu + \delta)^2}{\mu v^2}, 1, -\frac{\mu + \delta}{v}\right],$$
  $$\boldsymbol{b}^T = \left[0, 0, 1, \frac{v}{2} \pm \left(d + \frac{v^2}{4}\right)^{1/2}\right], \quad \boldsymbol{c}^T = [1, 0, 0, 0]$$

- **p.688**

  To determine the behaviour of the wave as it approaches this critical point, we now linearise (13.35) about (s_0, q_0, r_0) to get (after more algebra) the eigenvalues

$$\lambda_1, \lambda_2 = \frac{1}{2}\left[v - \frac{\mu}{v} \pm \left\{\left(v - \frac{\mu}{v}\right)^2 + 4(\mu + d)\right\}^{1/2}\right], \tag{13.39}$$

  to first-order in ε and δ, and

$$\begin{aligned}\lambda_3, \lambda_4 = &\pm \frac{i}{v}\left\{\frac{\varepsilon\mu d(1-d)}{\mu + d}\right\}^{1/2} \\ &- \varepsilon d\left\{2v(\mu + d)^2\right\}^{-1}\left\{\mu(1-d)\left(\frac{\mu}{v^2} - 1\right) + (\mu + d)^2\right\}\end{aligned} \tag{13.40}$$

  to second-order in ε and δ.

  should be

  この臨界点に近づく際の波の振舞いを決定するために，系 (13.35) を (s_0, q_0, r_0) の周りで線形化し，固有値は，ε, δ について 0 次で近似して，

$$\lambda_1, \lambda_2 = \frac{1}{2}\left[v - \frac{\mu}{v} \pm \left\{\left(v - \frac{\mu}{v}\right)^2 + 4(\mu + d)\right\}^{1/2}\right], \tag{13.39}$$

  および，ε, δ について 1 次で近似して，

$$\begin{aligned}\lambda_3, \lambda_4 = &\pm \frac{i}{v}\left\{\frac{\varepsilon\mu d(1-d)}{\mu + d}\right\}^{1/2} \\ &- \varepsilon d\left\{2v(\mu + d)^2\right\}^{-1}\left\{\mu(1-d)\left(\frac{\mu}{v^2} - 1\right) + (\mu + d)^2\right\}\end{aligned} \tag{13.40}$$

  となる．

- **p.689**

  Here ω is the period of the waves, given by the imaginary part of the complex eigenvalues divided by v, and λ is the decay rate of the amplitude, given by the real part of these eigenvalues divided by v.

  should be

  ここで，ω は複素数の固有値の虚部を v 倍することで得られた波の角振動数であり，λ はこれらの固有値の実部を v 倍して得られた振幅の減衰率である．

- **p.692**

  In terms of the original (x, t) variables these solutions can be written in the form

$$\begin{aligned} s(x,t) &= s_0 + A\cos[\omega(t + x/v) + \psi]\exp[-\lambda(t + x/v)], \\ q(x,t) &= q_0 + \frac{1}{\mu}(s - s_0)', \\ r(x,t) &= r_0 + \frac{\mu}{d}(q - q_0) \end{aligned} \tag{13.45}$$

  to first order in ε and δ, ...

  should be

  元の変数 (x, t) を用いると，これらの解は，ε, δ について 0 次で近似して，

$$\begin{aligned} s(x,t) &= s_0 + A\cos(\omega(t + x/v) + \psi)\exp(-\lambda(t + x/v)), \\ q(x,t) &= q_0 + \frac{1}{\mu}(s - s_0)', \\ r(x,t) &= r_0 + \frac{\mu}{d}(q - q_0) \end{aligned} \tag{13.45}$$

の形で表される．

- **p.697**
  (13.30) gives a carrying capacity outside the break region of $K = 149/(\alpha + 0.5\,\mathrm{yr}^{-1})$ foxes $\mathrm{km}^{-2}\,\mathrm{yr}^{-1}$.
  should be
  式 (13.30) からバリアの外部での環境収容力は $K = 149/(\alpha + 0.5$ 年$^{-1})$ 匹 km^{-2} となる．

- **p.697**
  Figure 13.14 gives $x_b = 15$. *should be* 図 13.14 から $x_c = 15$ となる．

- **p.702**
  Typical values for δ and μ are 0.46 and 0.08, respectively.
  should be
  d, μ の典型的な値は $d = 0.46$, $\mu = 0.08$ である．

- **p.702**
  the total number of infected foxes satisfies
  $$\int_{-\infty}^{\infty} (I + R)\, dX = \left(\frac{KD}{\beta}\right)^{1/2} \left(1 + \frac{\mu}{d}\right) q_0.$$
  From Figure 13.13,
  $$\int_{-\infty}^{\infty} (I + R) dX \approx 6.9 \text{ 匹} / \mathrm{km}$$
  giving $(KD/\beta)^{1/2} q_0 \approx 5.9$ foxes/km.
  should be
  感染個体の総数は
  $$\int_{0}^{\infty} (I + R)\, dX = \left(\frac{KD}{\beta}\right)^{1/2} \left(1 + \frac{\mu}{d}\right) q_0$$
  をみたす．図 13.13 から，
  $$\int_{0}^{\infty} (I + R) dX \approx 6.9 \text{ 匹} / \mathrm{km}$$
  であり，ここから，$(KD/\beta)^{1/2} q_0 \approx 5.9$ 匹 / km となる．

- **p.704**
  In the expression (13.68), the dependence of x_c on δ and m roughly agrees with Figure 13.14.
  should be
  式 (13.68) において，x_c の d および m への依存はおおむね図 13.14 と一致している．

- **p.711**

$$\begin{aligned}
\frac{\partial S}{\partial T} &= (a-b)\left[1-\frac{N}{K}\right] + a^* Z - \beta RS, \\
\frac{\partial I}{\partial T} &= \beta RS - \sigma I - \left[b + (a-b)\frac{N}{K}\right] I, \\
\frac{\partial R}{\partial T} &= \sigma I - \alpha R - \gamma R - \left[b + (a-b)\frac{N}{K}\right] R + D_R \frac{\partial^2 R}{\partial X^2}, \\
\frac{\partial Z}{\partial T} &= \gamma R + (a-a^*)Z - \left[b + (a-b)\frac{N}{K}\right] Z
\end{aligned} \tag{13.70}$$

should be

$$\begin{aligned}
\frac{\partial S}{\partial T} &= (a-b)\left(1-\frac{N}{K}\right) S + a^* Z - \beta RS, \\
\frac{\partial I}{\partial T} &= \beta RS - \sigma I - \left\{b + (a-b)\frac{N}{K}\right\} I, \\
\frac{\partial R}{\partial T} &= \sigma I - \alpha R - \gamma R - \left\{b + (a-b)\frac{N}{K}\right\} R + D_R \frac{\partial^2 R}{\partial X^2}, \\
\frac{\partial Z}{\partial T} &= \gamma R + (a-a^*)Z - \left\{b + (a-b)\frac{N}{K}\right\} Z
\end{aligned} \tag{13.70}$$

Chapter 14

- **p.724**
  White (1995) gives an extensive review of the literature and modelling studies and the articles by Lewis et al. (1998) and Moorcroft and Lewis (2001) review some of the more recent theoretical studies
  should be
  White (1995) には広範な文献やモデル研究の総説が書かれており，Lewis et al. (1997) や Moorcroft and Lewis (2001) には，本章で議論する機構論的モデルを用いた，最近の理論的研究が書かれている．

- **p.733**
  Equation (14.14) is a weak solution of (14.11), in the sense that it satisfies (14.11) at all points except $x = \pm x_b$.
  should be
  式 (14.14) は，$x = x_u \pm x_b$ を除く全ての点で式 (14.11) をみたすという意味で，式 (14.11) の弱解である．

- **p.735**

$$\boldsymbol{J}_{a_u} = a_u(q) u \nabla q \tag{14.17}$$

should be

$$\boldsymbol{J}_{a_u} = -a_u(q) u \nabla q \tag{14.17}$$

- **p.735**

$$\begin{aligned}
\boldsymbol{J}_{c_u} &= -u c_u(\boldsymbol{x} - \boldsymbol{x}_u, q), & c_u(0) \geq 0, \quad & \frac{dc_u}{dq} \geq 0, \\
\boldsymbol{J}_{d_u} &= -d_u(u) \nabla u, & d_u(0) \geq 0, \quad & \frac{dd_u}{du} \geq 0, \\
\boldsymbol{J}_{a_u} &= a_u(q) u \nabla q, & a_u(0) \geq 0, \quad & \frac{da_u}{dq} \geq 0
\end{aligned}$$

should be

$$\begin{aligned}\boldsymbol{J}_{c_u} &= -uc_u(\boldsymbol{x}-\boldsymbol{x}_u,q), & c_u(0)\geq 0, && \frac{dc_u}{dq}\geq 0,\\ \boldsymbol{J}_{d_u} &= -d_u(u)\nabla u, & d_u(0)\geq 0, && \frac{dd_u}{du}\geq 0,\\ \boldsymbol{J}_{a_u} &= -a_u(q)u\nabla q, & a_u(0)\geq 0, && \frac{da_u}{dq}\geq 0\end{aligned}$$

- **p.736**

$$\begin{aligned}\boldsymbol{J}_{c_v} &= -vc_v(\boldsymbol{x}-\boldsymbol{x}_v,p), & c_v(0)\geq 0, && \frac{dc_v}{dp}\geq 0,\\ \boldsymbol{J}_{d_v} &= -d_v(v)\nabla v, & d_v(0)\geq 0, && \frac{dd_v}{dv}\geq 0,\\ \boldsymbol{J}_{a_v} &= a_v(p)v\nabla p, & a_v(0)\geq 0, && \frac{da_v}{dp}\geq 0\end{aligned}$$

should be

$$\begin{aligned}\boldsymbol{J}_{c_v} &= -vc_v(\boldsymbol{x}-\boldsymbol{x}_v,p), & c_v(0)\geq 0, && \frac{dc_v}{dp}\geq 0,\\ \boldsymbol{J}_{d_v} &= -d_v(v)\nabla v, & d_v(0)\geq 0, && \frac{dd_v}{dv}\geq 0,\\ \boldsymbol{J}_{a_v} &= -a_v(p)v\nabla p, & a_v(0)\geq 0, && \frac{da_v}{dp}\geq 0\end{aligned}$$

- **p.738**

$$\boldsymbol{J}_{c_u} = -uc_u(\boldsymbol{x}-\boldsymbol{x}_u,q),\quad \boldsymbol{J}_{d_u} = -d_u(u)\nabla u,\quad \boldsymbol{J}_{a_u} = a_u(q)u\nabla q, \tag{14.33}$$
$$\boldsymbol{J}_{c_v} = -vc_v(\boldsymbol{x}-\boldsymbol{x}_v,p),\quad \boldsymbol{J}_{d_v} = -d_v(v)\nabla v,\quad \boldsymbol{J}_{a_v} = a_v(p)v\nabla p \tag{14.34}$$

should be

$$\boldsymbol{J}_{c_u} = -uc_u(\boldsymbol{x}-\boldsymbol{x}_u,q),\quad \boldsymbol{J}_{d_u} = -d_u(u)\nabla u,\quad \boldsymbol{J}_{a_u} = -a_u(q)u\nabla q, \tag{14.33}$$
$$\boldsymbol{J}_{c_v} = -vc_v(\boldsymbol{x}-\boldsymbol{x}_v,p),\quad \boldsymbol{J}_{d_v} = -d_v(v)\nabla v,\quad \boldsymbol{J}_{a_v} = -a_v(p)v\nabla p \tag{14.34}$$

- **p.740**

  $c(\boldsymbol{x}-\boldsymbol{x}_{\boldsymbol{u}},q)=0$ *should be* $c(\boldsymbol{x}-\boldsymbol{x}_u,q)=0$

- **p.742**

  where $K=[u(0)+v(0)]/d$ is a positive constant.
  should be
  ここで $K=u(0)+v(0)$ は正の定数である.

- **p.742**

$$p_x = \frac{(1+\mu u)(\mu u-1)}{(1-\mu uv)^2}v_x,\quad q_x = \frac{(1+\mu v)(\mu v-1)}{(1-\mu uv)^2}u_x \tag{14.51}$$

should be

$$p_x = \frac{(1+\mu u)(\mu u - 1)}{(1-\mu^2 uv)^2} v_x, \quad q_x = \frac{(1+\mu v)(\mu v - 1)}{(1-\mu^2 uv)^2} u_x \tag{14.51}$$

- **p.743**

$$\begin{aligned}
\frac{\partial u}{\partial t} &= \nabla \cdot [c_u(\boldsymbol{x} - \boldsymbol{x}_u)u + D_u(u)\nabla u - a_u(q)u\nabla q], \\
\frac{\partial v}{\partial t} &= \nabla \cdot [c_v(\boldsymbol{x} - \boldsymbol{x}_v)v + D_v(v)\nabla v - a_v(p)v\nabla p], \\
\frac{\partial p}{\partial t} &= u[l_p + m_p(q)] - f_p p, \\
\frac{\partial q}{\partial t} &= v[l_q + m_q(p)] - f_q q
\end{aligned} \tag{14.52}$$

should be

$$\begin{aligned}
\frac{\partial u}{\partial t} &= \nabla \cdot [c_u(\boldsymbol{x} - \boldsymbol{x}_u)u + D_u(u)\nabla u + a_u(q)u\nabla q], \\
\frac{\partial v}{\partial t} &= \nabla \cdot [c_v(\boldsymbol{x} - \boldsymbol{x}_v)v + D_v(v)\nabla v + a_v(p)v\nabla p], \\
\frac{\partial p}{\partial t} &= u[l_p + m_p(q)] - f_p p, \\
\frac{\partial q}{\partial t} &= v[l_q + m_q(p)] - f_q q
\end{aligned} \tag{14.52}$$

- **p.743**

$$\frac{\partial u}{\partial t} = \nabla \cdot [c_u(\boldsymbol{x} - \boldsymbol{x}_u, q)u + d_u\nabla u - a_u(q)u\nabla q], \tag{14.53}$$
$$\frac{\partial v}{\partial t} = \nabla \cdot [c_v(\boldsymbol{x} - \boldsymbol{x}_v, p)v + d_v\nabla v - a_v(p)v\nabla p], \tag{14.54}$$
$$\frac{\partial p}{\partial t} = u[1 + m_p(q)] - p, \tag{14.55}$$
$$\frac{\partial q}{\partial t} = v[1 + m_q(p)] - \phi q \tag{14.56}$$

should be

$$\frac{\partial u}{\partial t} = \nabla \cdot [c_u(\boldsymbol{x} - \boldsymbol{x}_u, q)u + d_u\nabla u + a_u(q)u\nabla q], \tag{14.53}$$
$$\frac{\partial v}{\partial t} = \nabla \cdot [c_v(\boldsymbol{x} - \boldsymbol{x}_v, p)v + d_v\nabla v + a_v(p)v\nabla p], \tag{14.54}$$
$$\frac{\partial p}{\partial t} = u[1 + m_p(q)] - p, \tag{14.55}$$
$$\frac{\partial q}{\partial t} = v[1 + m_q(p)] - \phi q \tag{14.56}$$

- **p.747**
  A fuller model which includes seasonal deer reproduction is discussed by White et al. (1996a);
  should be
  シカの繁殖は季節的に起こるが，それを含む，より完全なモデルは White et al. (1996b) によって議論されている．

- **p.749**
  Taken on a daily basis this gives a mortality rate of about 0.002%.
  should be
  1 日に換算すると，死亡率は 0.2% となる．

- **p.752**
  The analysis of the prey-taxis model discussed in Section 14.3
  should be
  14.4 節で議論した，餌への走性に関する解析は，

Appendix A

- **p.757**

$$\int_B |\nabla^2 \boldsymbol{u}|^2 d\boldsymbol{r} \geq \mu \int_{\partial B} ||\nabla \boldsymbol{u}||^2 d\boldsymbol{r} \qquad \text{(A4.2)}$$

  should be

$$\int_B |\nabla^2 \boldsymbol{u}|^2 d\boldsymbol{r} \geq \mu \int_{B} ||\nabla \boldsymbol{u}||^2 d\boldsymbol{r} \qquad \text{(A.2)}$$

- **p.757**
  In (A4.2), μ is the least positive eigenvalue of $\nabla^2 + \mu$ for B with Neumann conditions on ∂B
  should be
  ただし，式 (A.2) において μ は，∂B 上でノイマン条件をみたすような ∇^2 の正の固有値のうち最小のものであり

- **p.757**

$$||\nabla \boldsymbol{u}|| = \max_{r \in B} \left[\sum_{i,j} \left(\frac{\partial u_i}{\partial x_j} \right)^2 \right]^{1/2}$$
$$\boldsymbol{r} = (x_j), \quad j = 1, 2, 3; \quad \boldsymbol{u} = (u_i), \quad i = 1, 2, \ldots, n \qquad \text{(A4.3)}$$

  should be

$$||\nabla \boldsymbol{u}|| = \left[\sum_{i,j} \left(\frac{\partial u_i}{\partial x_j} \right)^2 \right]^{1/2}$$
$$\boldsymbol{r} = (x_j), \quad j = 1, 2, 3; \quad \boldsymbol{u} = (u_i), \quad i = 1, 2, \ldots, n \qquad \text{(A.3)}$$

- **p.759**

$$\nabla^2 \boldsymbol{w} = \sum_{k=0}^{\infty} a_k \boldsymbol{\phi}_k(\boldsymbol{r}),$$
$$a_k = \int_B \langle \nabla^2 \boldsymbol{w}, \boldsymbol{\phi}_k \rangle d\boldsymbol{r}, \qquad \text{(A4.8)}$$
$$a_0 = \langle \boldsymbol{\phi}_0, \int_B \nabla^2 \boldsymbol{w} d\boldsymbol{r} \rangle = \langle \boldsymbol{\phi}_0, \int_{\partial B} \nabla \boldsymbol{w} d\boldsymbol{r} \rangle = 0.$$

should be

$$\begin{aligned}
\nabla^2 \boldsymbol{w} &= \sum_{k=0}^{\infty} a_k \boldsymbol{\phi}_k(\boldsymbol{r}), \\
a_k &= \int_B \langle \nabla^2 \boldsymbol{w}, \boldsymbol{\phi}_k \rangle d\boldsymbol{r}, \\
a_0 &= \langle \boldsymbol{\phi}_0, \int_B \nabla^2 \boldsymbol{w} d\boldsymbol{r} \rangle = \langle \boldsymbol{\phi}_0, \int_{\partial B} \boldsymbol{n} \cdot \nabla \boldsymbol{w} d\boldsymbol{r} \rangle = 0.
\end{aligned} \tag{A.8}$$