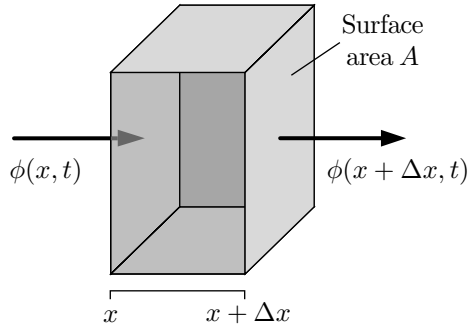
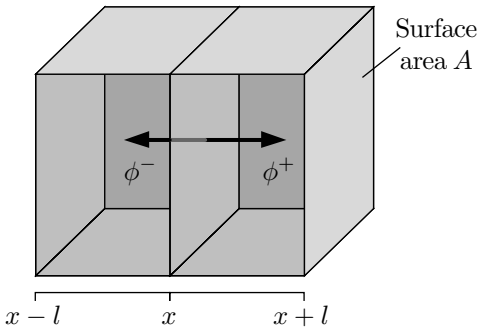
# Changes and Errata to
# *Cellular Biophysics, Volume 1: Transport*
# by Thomas F. Weiss
# May 3, 1999

- Page *xxix*, Seventh line, replace "$133.3 \times 10^5$ N $\cdot$ m$^{-2}$" with "133.3 N $\cdot$ m$^{-2}$"
- Page *xxix*, Insert as first entry in table [Name] "Acceleration of gravity" [Symbol] "$g$" [Value] " 9.807 m $\cdot$ s$^{-2}$"
- Page *xxx*, Second entry in table (for Dielectric constant), third column, remove "cm$^2\cdot$ s$^{-1}$"
- Page 8, Sixth line from bottom of the page, change "and disassembled" to "(and disassembled)"
- Page 84, Line 1, change "To study diffusion" to "For example, to study diffusion"
- Page 88, replace Figure 3.2 with

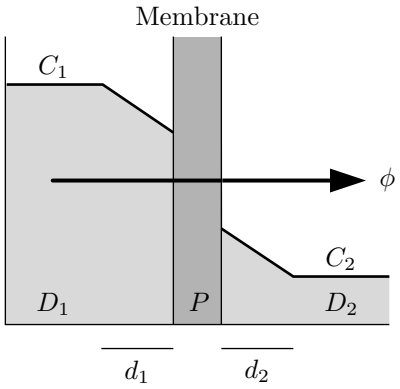



- Page 94, replace Figure 3.4 with



- Page 158, Exercise 3.10, Sentence 33, replace "The volume of bath 2 is $\mathcal{V}_2$." with "Bath 2 has volume $\mathcal{V}_2$ and a concentration of solute $n$ that is zero."

- Page 166, replace Figure 3.59 with




- Page 167, Line 3, replace "equilibration time of $X$ in the" with "time for $X$ to reach steady state in the"

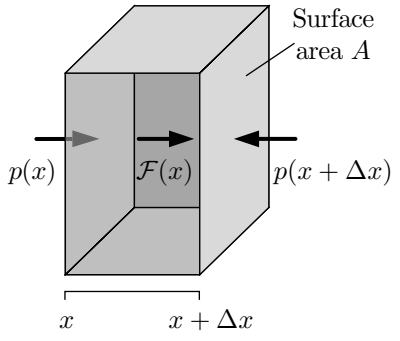
- Page 171, Item 'c.', line 2, replace "membrane, i.e., does" with "membrane at each instant in time, i.e., does"

- Page 171, In the equation of Item 'c.', replace "$\phi_n = P_s(c_n^1 - c_n^2)$?" with "$\phi_n(t) = P_s(c_n^1(t) - c_n^2(t))$?"

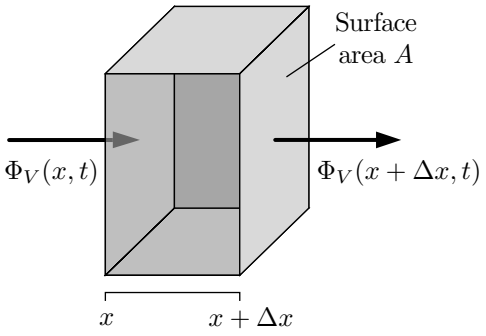
- Page 171, Item 'd.', line 2, replace "membrane, i.e., does" with "membrane at each instant in time, i.e., does"

- Page 171, In the equation in Item 'd.', replace "$\phi_n = P_l(c_n^1 - c_n^2)$?" with "$\phi_n(t) = P_l(c_n^1(t) - c_n^2(t))$?"

- Page 188, replace Figure 4.1 with

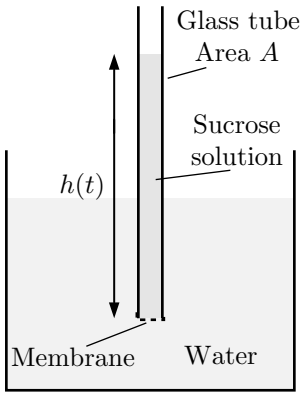


- Page 199, replace Figure 4.6 with

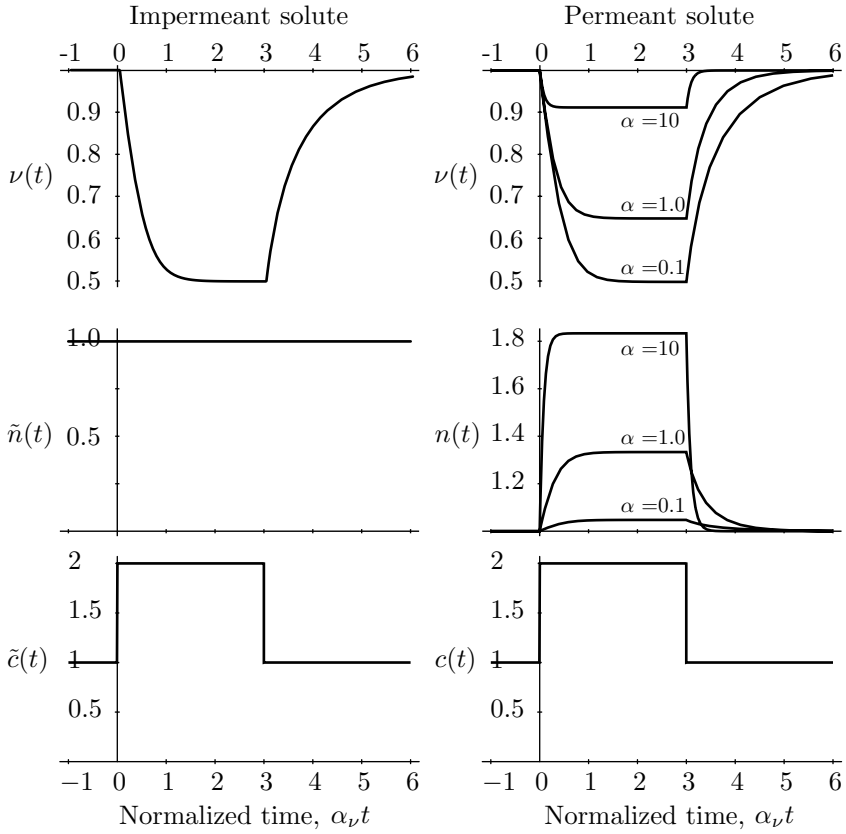



- Page 204, In the first line of the section **Water Diffusion**, remove "by means of" and replace with "with water that contains"
- Page 204, In the second line of the section **Water Diffusion**, replace "water (e.g., deuterium, tritium, etc.)" with "hydrogen (tritium)"
- Page 235, Line 6 of Figure 4.28 caption, replace "(pm $\cdot$ s$^{-1}$ $\cdot$ Pa)" with "(pm $\cdot$ s$^{-1}$ $\cdot$ Pa$^{-1}$)"
- Page 255, Fifth line from bottom of page, replace "$\mathcal{V}_c$." with "$\mathcal{V}_c$, and $\mathcal{V}_c' \ll \mathcal{V}_c$."
- Page 255, Last line on page, replace "Are" with "Determine if " and change "volume, $d\nu(t)/dt$ at" to "volume ($d\nu(t)/dt$ at"
- Page 256, Line 1, replace "$t = 0+$, and $\nu(\infty)$" with "$t = 0+$) and the final value ($\nu(\infty)$) of the normalized volume are"
- Page 263, Line 1, replace "a." with "1." and replace "was" with "is"
- Page 263, Line 2, replace "stood" with "stands"
- Page 263, Line 3, replace "had" with "has", replace "30.7" with "36.5", and replace "could" with "can"
- Page 263, Line 4, replace "had" with "has" and "was" with "is"
- Page 263, Line 6, replace "b." with "2."

- Page 265, replace Figure 4.47 with



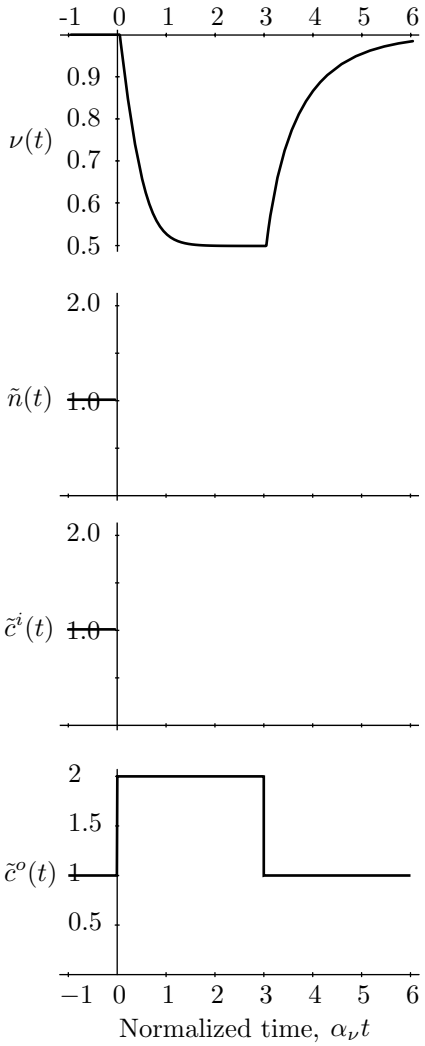

- Page 268, In first line of item 'a.', replace "less" with "fewer"
- Page 270, Line 5, replace "$C^o_\Sigma(t) < C^o_\Sigma(t)$" with "$C^o_\Sigma(t) < C^i_\Sigma(t)$"
- Page 283, Line 9 in Figure 5.2 caption, change "test" to "tests"
- Page 288, replace Figure 5.3 with



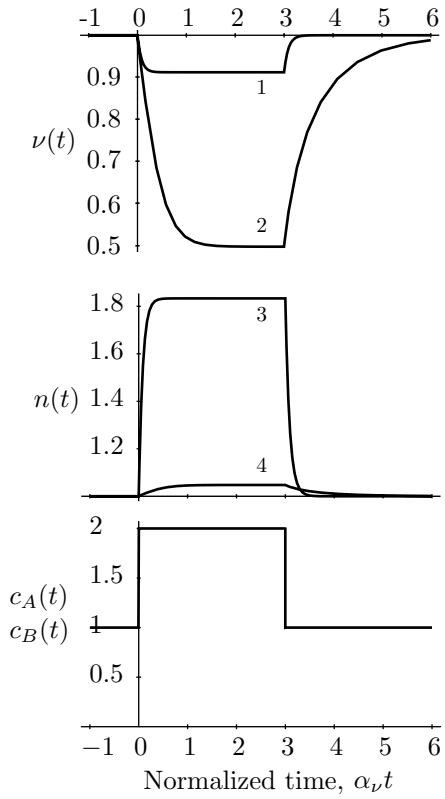
- Page 293, Line 8 of Figure 5.6 caption, replace "(pm $\cdot$ $s^{-1}$ $\cdot$ Pa)" with "(pm $\cdot$ $s^{-1}$ $\cdot$ $Pa^{-1}$)"

- Page 297, Line 5 of first paragraph, replace "water molecules, e.g., tritium." with "water molecules, e.g. with tritium replacing hydrogen." and replace "solvent and tritium" with "solvent and tritiated water"

- Page 318, replace Figure 5.16 with

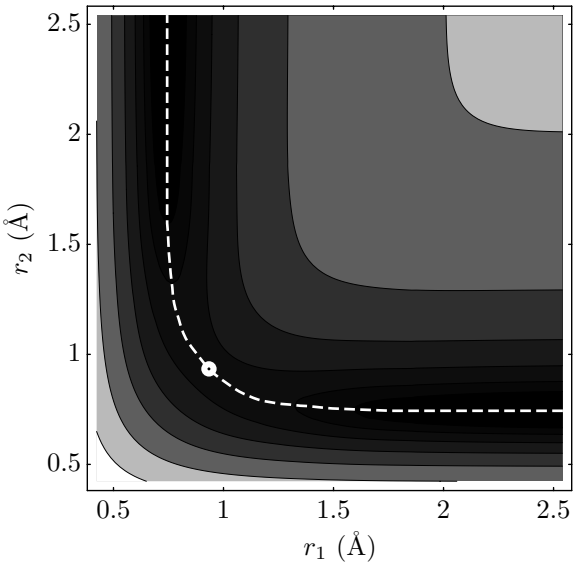


- Page 319, replace Figure 5.17 with



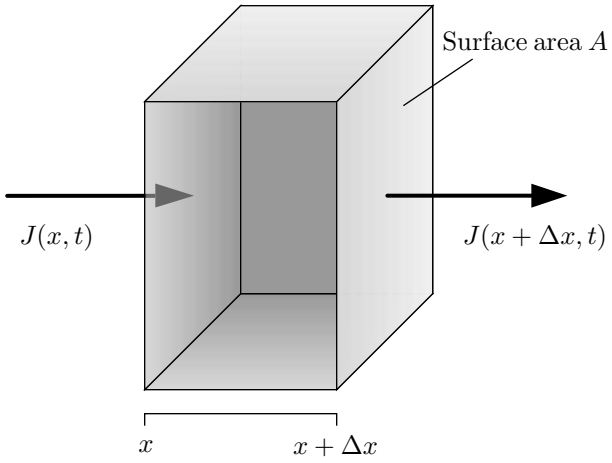

- Page 323, Line 7, replace "are" with "is"
- Page 323, Line 8, replace "largest?" with "larger?"
- Page 324, Line 18, replace "by radioactive" with "with heavy"
- Page 347, Lines 9 and 10. Remove "Since we assume the enzyme is conserved,"
- Page 347, Line 20 replace "Michaelis-Menton" with "Michaelis-Menten"
- Page 348 Line 1 in Figure 6.8 caption, replace "Michaelis-Menton" with "Michaelis-Menten"

- Page 353, replace Figure 6.14 with




- Page 388, Line 16, replace "the the" with "the"
- Page 422, Second Line from bottom of page, replace "$\tau_e$" with "$\tau_{eq}$"
- Page 423, Line 1, replace "$\tau_e$" with "$\tau_{eq}$"
- Page 423, Line 3, replace "$\tau_d$," with "$\tau_{ss}$,"
- Page 423, Line 5, replace "$\tau_d$" with "$\tau_{ss}$"
- Page 424, In the equation in Problem 6.4, replace "$c^i$" with "$c^i(t)$" in both instances
- Page 424, In the fourth line of Problem 6.4, replace "$c^i$" with "$c^i(t)$"
- Page 426, Line 7, replace "concentration" with "densities"
- Page 429, Problem 6.9, Add after "initial concentration is $C$." the sentence "Assume that the change in intracellular osmolarity is negligible."
- Page 456, Line 6, replace "Using" with "With"

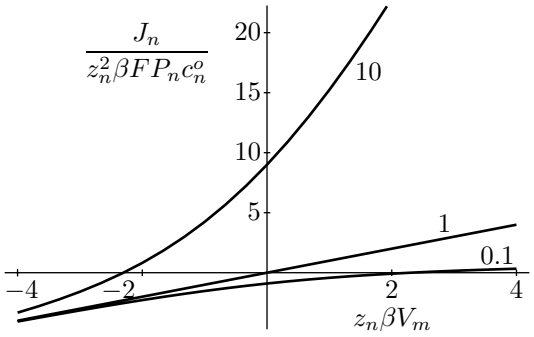
- Page 457, replace Figure 7.5 with



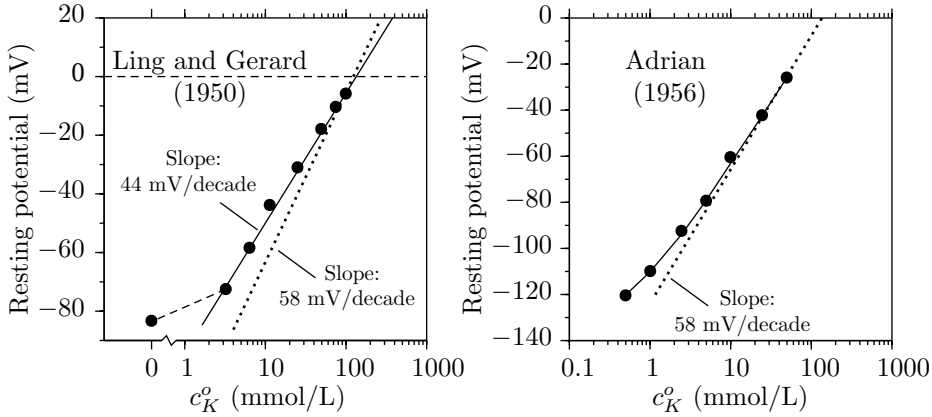

- Page 463, Last line, replace $\sinh \Psi(x)$ with $\sinh \Psi(X)$
- Page 464, Equation 7.27, replace with

$$\Psi = \frac{\psi}{RT/(zF)}$$

- Page 473, Line 7 of Figure 7.11 caption, add "The electric field was 0.548 V/cm."
- Page 491, Line 12, replace "−68" with "−60"
- Page 501, Fourth line from bottom of page, change "flux ion" to "flux of ion"
- Page 510, Third line from bottom of page, replace "low-sodium" with "sodium"
- Page 511, Line 7 of Figure 7.42 caption, replace "low-sodium" with "sodium"
- Page 512, Line 9, replace "effect" with "dependence"
- Page 514, Second paragraph, third line, replace "First, addition" with "Addition"
- Page 517, Line 10 of Figure 7.46 caption, remove ", obviating" and replace with "which interferred with"
- Page 530, third line from bottom of page, the two coefficients of $V_m$ should be $(z_n^2 \beta F P_n c_n^i)$ and $(z_n^2 \beta F P_n c_n^o)$, respectively.
- Page 531, replace Figure 7.52 with




- Page 531, add to the end of the caption of figure 7.52 "The parameter is $c_n^o/c_n^i$."
- Page 546, Third line from bottom of page, replace "0.2mol/L" with "0.2 mol/L"
- Page 555, replace Figure 7.68 with




- Page 584, Line 14, replace "$c_p^i$" with "$c_i^i$"
- Page 584, Line 15, replace "$c_p^i(t) = n_p^i(t)/\mathcal{V}(t)$" with "$c_i^i(t) = n_i^i(t)/\mathcal{V}(t)$"
- Page 584, Line 16, replace "$c_p^i(t) = (n_p^i(t)$" with "$c_i^i(t) = (n_i^i(t)$"
- Page 628, Line 11, remove "for a $z_+$-$z_-$ electrolyte"
- Page 628, Line 14, remove "equilibrium"
- Page 630, Part a, Line 1, replace "$V_m$" with "$V_m^o$" and replace "the potential" with "the resting potential"
- Page 630, Part a, Line 2, replace "$V_m$" with "$V_m^o$"
- Page 630, Part a, Part v, Line 1, replace "Equilibrium" with "Quasi-equilibrium"
- Page 630, Part c, Line 1, replace "equilibrium" with "quasi-equilibrium"

- Page 630, Part c, Line 2, replace "equilibrium" with "quasi-equilibrium"
- Page 631, in the last line, the denominator of the righthand side of the equation should read "$x(t)(L - x(t))$"
- Page 632, Line 12, the denominator of the righthand side of the equation should read "$x(t)(L - x(t))$"
- Page 633, Third line from bottom of page, replace "$\phi_K^o$" with "$\phi_K^{co}$"
- Page 634, every instance of "equilibrium" should be preceded by "electrodiffusive"
- Page 635, every instance of "equilibrium" should be replaced with "quasi-equilibrium"
- Page 683, Column 3, Line 8, replace "Michaelis-Menton" with "Michaelis-Menten"