Errata
The Thermodynamic Machinery of Life by Michal Kurzynski,
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Chapter 2
(2.21), (2.22), (2.30), (2.31), (2.32), (2.33), (2.37), a missing symbol δ, denoting fluctuation, should be added.
Chapter 4
Page 73, caption of Fig. 4.3, line 2: 'nucleotide' should be 'nucleoside', line -11: 'lactose' should be 'lactic'.
Page 75, caption of Fig. 4.4, line -2: 'protons passing' should be 'pump transferring protons'.
Page 84, line -2: 'dissociation' should be 'decomposition'.
Page 85, first line: 'elimination' should be 'precipitation'.
Page 88, (4.5), second line: 'GDP' should be 'GTP'.
Chapter 5
Page 91, line 2: '5 m' should be '5 μm', line 4: '0.5 m' should be '0.5 μm'.
Page 100, line -11: ', whose detailed structure is not yet known' should be removed.
Page 106, second paragraph, line -2: 'the outer to the inner' should be 'the inner to the outer'.
Chapter 7
Page 181, second paragraph, first line: (7.11) should be (7.18).
Chapter 8
Page 217, (8.38), and Page 218, (8.40): C_1 and K_1 should be exchanged for C_2 and K_2 and vice versa.
Chapter 9
Page 226, second paragraph, line 3: 'local' should be 'partial'.
Page 227, line 4: 'complete' should be 'purely', k^{-1} should be $(k^{\mathrm{eq}})^{-1}$.
Page 228, line -3: '1 m^3' should be '1 $\mu\mathrm{m}^3$'.
Page 229, line -4: $C(t)$ should be $G(t)$.
Page 245, after last line, sentence 'A two-step movement, presumably corresponding to alternating power-stroke and Brownian diffusion, was observed in the single molecule motility assay for an unconventional myosin I (Veigel et al. 1999).' should be added.
Page 251, line 3: '20 M' should be '20 μM', (9.23), denominator should be

$$\tau_{\mathrm{M}}(1' \leftrightarrow \{1'', 2'\}) - \tau_{\mathrm{M}}(1' \leftrightarrow \{1'', 2''\})\,.$$

Page 253, (9.30), numerator should be

$$(k^{\mathrm{eq}}_{-2'})^{-1} + [\mathrm{M}]^{\mathrm{eq}}/[\mathrm{E}_2]^{\mathrm{eq}}\, \tau_{\mathrm{E}_2}(2' \leftrightarrow 2'') + \tau_{\mathrm{M}}(2' \leftrightarrow \{1'', 2''\})\,,$$

(9.31), numerator should be

$$\tau_{\mathrm{M}}(1' \leftrightarrow 1'') - \tau_{\mathrm{M}}(1'' \leftrightarrow \{1', 2'\}) - \tau_{\mathrm{M}}(1' \leftrightarrow \{1'', 2''\})\,.$$

Page 255, third paragraph, line 5: 'slippage' should be 'a load'.
Page 256, first paragraph, last sentence should be removed, third paragraph, line 3: 'initial' should be removed, line 5: 'and (9.29)' should be removed, line -4: '$\mathrm{m\,s^{-1}}$' should be '$\mu\mathrm{m\,s^{-1}}$', fourth paragraph, first two sentences should be removed.
Page 257, first paragraph, last sentence should be replaced by 'The reasoning presented here suggests that a more acceptable interpretation is in terms of the transmission coefficient. It is an open question whether the step size d varies with the filament overlap but the transmission coefficient c certainly does, being dependent on $\tau_{\mathrm{E}_2}(2' \leftrightarrow 2'')$. Moreover, this coefficient should be much greater than unity.' Second paragraph should be removed as a whole and replaced by 'In the paper which we summarize here (Kurzyński and Chełminiak, 2003), we have suggested that c can be approximated by the ratio $\tau_{\mathrm{M}}(1' \leftrightarrow 1'')/\tau_{\mathrm{M}}(2' \leftrightarrow 2'')$ which is much greater than unity because of the necessity of the already discussed melting and recrystallization of the SH1–SH2 helix during a transition from the substate $1''$ to $1'$ and back within the state M. However, this approximation is poor as it can be proved that

$$\begin{aligned}(9.35)\qquad &\tau_{\mathrm{M}}(1' \leftrightarrow 1'') - \tau_{\mathrm{M}}(1'' \leftrightarrow \{1', 2'\}) - \tau_{\mathrm{M}}(1' \leftrightarrow \{1'', 2''\}) \\ &= \tau_{\mathrm{M}}(2' \leftrightarrow 2'') - \tau_{\mathrm{M}}(2'' \leftrightarrow \{1', 2'\}) - \tau_{\mathrm{M}}(2' \leftrightarrow \{1'', 2''\})\,.\end{aligned}$$

A direct consequence of this equality is that the transmission coefficient (9.31) can never be greater than unity as in the numerator the positive quantities are subtracted from $\tau_{\mathrm{M}}(2' \leftrightarrow 2'')$ and in the denominator the positive quantities are added to $\tau_{\mathrm{M}}(2' \leftrightarrow 2'')$. The melting and recrystallization of the SH1–SH2 helix is certainly a long lasting process but the system forgets it each time it crosses the gate composed of a single substate. Multiple repetition of the cycle J_2 per one cycle J_1 at the expense of the progressive refolding of the SH1–SH2 helix is possible if the gate is widen to several substates (Terrada et al., 2002). Preliminary calculations for widened gates give indeed the values of the transmission coefficient greater than unity.' Third paragraph, line -6: 'Equation' should be 'A possibly generalized equation of the type'.

Page 258, line 2: ‘consistent’ should be ‘consistent, after a generalization to wider gates’.

Appendix A

(A.99), (A.104), (A.110), (A.115), (A.120), (A.121), (A.122), (A.123), a missing symbol δ, denoting fluctuation, should be added.

Page 274, first paragraph, last line: X' and A' should be X and A, respectively.

Appendix B

(B.29), (B.30), (B.32), (B.49), (B.56), a missing symbol δ, denoting fluctuation, should be added.

Page 301, second paragraph, line 2: ‘exponential decay’ should be ‘plateau’, (B.80): $+$ should be $-$.

Appendix C

Page 303, caption of Fig. B.4, line 1: ‘Any’ should be ‘On assuming partial equilibrium, any’.

Page 326, second paragraph, first line: ‘unsaturated’ should be ‘saturated’.

Page 333, second paragraph, line 2: ‘capacity’ should be removed.

Page 344, lines 2 and 3: ‘pyrimidine’ and ‘purine’ should be exchanged.

Appendix D

Page 355, line 4: ‘1 s’ should be ‘1 μs’.

Page 375, last line: A$\cdots$H–B$^+$ should be A$^-\cdots$H–B$^+$.

Page 377, second paragraph, line 4: ‘quantum states $|\mathrm{R}\rangle$ and $|\mathrm{P}\rangle$’ should be ‘excitations’, line -4: ‘position’ should be ‘coordinate’.

Page 379, third paragraph, line -3: ‘adiabatic’ should be ‘vibronic (vibrational-electric)’, line -2: ‘$|\mathrm{R}q\rangle$ and $|\mathrm{R}q\rangle$’ should be ‘$|\mathrm{R}q\rangle$ and $|\mathrm{P}q\rangle$’.

Page 381, first paragraph, line -4: ‘adiabatic’ should be ‘vibronic’.

Page 382, (D.47) should be

$$w_{m-1,m} = 2m\kappa \left[1 + \mathrm{e}^{-\beta\omega}\right]^{-1}, \qquad w_{m,m-1} = 2m\kappa \left[1 + \mathrm{e}^{\beta\omega}\right]^{-1},$$

(D.48): δ should be ρ, next line: ‘where’ should be ‘where ρ is the temperature-dependent density of states of the heatbath for a given energy, and’, (D.54): $p_{\mathrm{R}n}$ should be $p_{\mathrm{P}n}$.

Page 383, (D.55), first and third line: (q, t) should be (e, t), (D.58): factor in the exponent should be squared: $[e - (\epsilon + \lambda)^2/4\lambda]^2$.

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