p. 39, Eq. (2.113)

$$
\begin{aligned}
i(t) &= \frac{E_0}{R}\frac{1}{1+\frac{1}{(\omega RC)^2}}\left[\tan(\varphi)\cos(\omega t)+\sin(\omega t)\right]= \\
&= \frac{E_0}{R}\cos(\varphi)\left[\frac{\cos(\omega t)\sin(\varphi)}{\cos(\varphi)}+\sin(\omega t)\right]=\frac{E_0}{R}\left[\cos(\omega t)\sin(\varphi)+\sin(\omega t)\cos(\varphi)\right]
\end{aligned}
\tag{2.113}
$$

p. 40. Eq. (2.118)

$$
\begin{aligned}
i(t) &= \frac{E_0}{R}\frac{1}{1+\frac{1}{(\omega RC)^2}}\left[\cos(\omega t)-\tan(\varphi)\sin(\omega t)\right]= \\
&= \frac{E_0}{R}\frac{1}{1+\frac{1}{(\omega RC)^2}}\left[\frac{\cos(\omega t)\cos(\omega t)-\sin(\varphi)\sin(\omega t)}{\cos(\varphi)}\right]
\end{aligned}
\tag{2.118}
$$

p. 46, Eq. (2.135)-(2.136)

$$
\begin{aligned}
\hat{Z}(j\omega) &= R_0+\frac{R_1}{1+j\omega R_1C_1}=R_0+\frac{R_1(1-j\omega R_1C_1)}{1+(\omega R_1C_1)^2}= \\
&= R_0+\frac{R_1}{1+(\omega R_1C_1)^2}-j\frac{\omega R_1^2C_1}{1+(\omega R_1C_1)^2}
\end{aligned}
\tag{2.135}
$$

$$
\begin{aligned}
\mathrm{Re}\left[\hat{Z}(j\omega)\right] &= R_0+\frac{R_1}{1+(\omega R_1C_1)^2} \\
\mathrm{Im}\left[\hat{Z}(j\omega)\right] &= -\frac{\omega R_1^2C_1}{1+(\omega R_1C_1)^2}
\end{aligned}
\tag{2.136}
$$

p. 50, Eq. (2.140)

$$
\begin{aligned}
|Z| &= \sqrt{R^2+\frac{1}{(\omega C)^2}} \\
\varphi &= \mathrm{atan}\left(\frac{Z''}{Z'}\right)=\mathrm{atan}\left(-\frac{1}{\omega RC}\right)=-\mathrm{atan}\left(\frac{1}{\omega RC}\right)
\end{aligned}
\tag{2.140}
$$

p. 92, Eq. (4.39).

$$C_{\mathrm{O}}(0) = 1 - \frac{i}{i_{\mathrm{lim}}} \quad \text{and} \quad C_{\mathrm{R}}(0) = \frac{i}{i_{\mathrm{lim}}} \tag{4.39}$$

p. 92, Eq. (4.41)

$$\begin{aligned} \hat{Z}_{\mathrm{W}} &= \hat{Z}_{\mathrm{W,O}} + \hat{Z}_{\mathrm{W,R}} = \frac{RT}{n^2F^2\sqrt{j\omega}}\left(\frac{1}{\sqrt{D_{\mathrm{O}}}C_{\mathrm{O}}(0)} + \frac{1}{\sqrt{D_{\mathrm{R}}}C_{\mathrm{R}}(0)}\right) \\ &= \frac{\sigma'}{\sqrt{j\omega}} = \frac{\sqrt{2}}{\sqrt{j}}\frac{\sigma}{\sqrt{\omega}} = \sigma(1-j) \end{aligned} \tag{4.41}$$

p. 105, Eq. (4.76)

$$\lim_{\omega\to 0}\left(\hat{Z}_{\mathrm{t}}\right) = R_{\mathrm{s}} + R_{\mathrm{ct}} + \frac{\sigma' l}{\sqrt{D_{\mathrm{O}}}} \tag{4.76}$$

p. 113, Eq. (4.106)

$$\begin{aligned} \hat{Z}_{\mathrm{W}} &= \frac{RT}{n^2F^2\sqrt{D_{\mathrm{R}}}C_{\mathrm{R}}(0)} \frac{1}{\sqrt{j\omega}\coth\left(\sqrt{\frac{j\omega}{D_{\mathrm{R}}}}r_0\right) - \frac{\sqrt{D_{\mathrm{R}}}}{r_0}} = \\ &= \frac{\sigma'}{\sqrt{j\omega}} \frac{1}{\coth\left(\sqrt{\frac{j\omega}{D_{\mathrm{R}}}}r_0\right) - \frac{\sqrt{D_{\mathrm{R}}}}{r_0\sqrt{j\omega}}} = \\ &= \frac{\sigma' r_0}{\sqrt{D_{\mathrm{R}}}} \frac{1}{\left(\sqrt{\frac{j\omega}{D_{\mathrm{R}}}}r_0\right)\coth\left(\sqrt{\frac{j\omega}{D_{\mathrm{R}}}}r_0\right) - 1} \end{aligned} \tag{4.106}$$

p. 141, Eq. (5.71)

$$\mathrm{B_{ads}} + \mathrm{e} \underset{\overleftarrow{k}_{-2}}{\overset{\overrightarrow{k}_2}{\rightleftarrows}} \mathrm{C_{ads}} \tag{5.71}$$

p. 142, Eq. (5.80)

$$\tilde{i} = -F\left[\left(\frac{\partial r_0}{\partial \eta}\right)_{\theta_\mathrm{B},\theta_\mathrm{C}} \tilde{\eta} + \left(\frac{\partial r_0}{\partial \theta_\mathrm{B}}\right)_{\eta,\theta_\mathrm{C}} \tilde{\theta}_\mathrm{B} + \left(\frac{\partial r_0}{\partial \theta_\mathrm{C}}\right)_{\eta,\theta_\mathrm{B}} \tilde{\theta}_\mathrm{C}\right] \tag{5.80}$$

p. 150, Eq. (6.19), (6.20), (6.21) (errors in signs)

$$\begin{aligned}
-\left(\frac{\partial r_0}{\partial \eta}\right) &= \frac{1}{F}\frac{\tilde{i}}{\tilde{\eta}} + \left(\frac{\partial r_0}{\partial \theta_\mathrm{B}}\right)\frac{\tilde{\theta}_\mathrm{B}}{\tilde{\eta}} + \left(\frac{\partial r_0}{\partial C_\mathrm{A}}\right)\frac{\tilde{C}_\mathrm{A}(0)}{\tilde{\eta}} + \left(\frac{\partial r_0}{\partial C_\mathrm{C}}\right)\frac{\tilde{C}_C(0)}{\tilde{\eta}} \\
0 &= -\frac{1}{2F}\frac{\tilde{i}}{\tilde{\eta}} + \sqrt{j\omega D_\mathrm{A}}\,\frac{\tilde{C}_\mathrm{A}(0)}{\tilde{\eta}} \\
0 &= \quad \frac{1}{2F}\frac{\tilde{i}}{\tilde{\eta}} + \sqrt{j\omega D_\mathrm{C}}\,\frac{\tilde{C}_\mathrm{C}(0)}{\tilde{\eta}} \\
-\left(\frac{\partial r_1}{\partial \eta}\right) &= -\Gamma_\infty j\omega\frac{\tilde{\theta}_\mathrm{B}}{\tilde{\eta}} + \left(\frac{\partial r_1}{\partial \theta_\mathrm{B}}\right)\frac{\tilde{\theta}_\mathrm{B}}{\tilde{\eta}} + \left(\frac{\partial r_1}{\partial C_\mathrm{A}}\right)\frac{\tilde{C}_\mathrm{A}(0)}{\tilde{\eta}} + \left(\frac{\partial r_1}{\partial C_\mathrm{C}}\right)\frac{\tilde{C}_\mathrm{C}(0)}{\tilde{\eta}}
\end{aligned} \tag{6.19}$$

$$\begin{bmatrix} -\dfrac{\partial r_0}{\partial \eta} \\ 0 \\ 0 \\ -\dfrac{\partial r_1}{\partial \eta} \end{bmatrix} = \begin{bmatrix} \dfrac{1}{F} & \dfrac{\partial r_0}{\partial \Theta} & \dfrac{\partial r_0}{\partial C_A} & \dfrac{\partial r_0}{\partial C_C} \\ -\dfrac{1}{2F} & 0 & \sqrt{j\omega D_A} & 0 \\ \dfrac{1}{2F} & 0 & 0 & \sqrt{j\omega D_C} \\ 0 & \dfrac{\partial r_1}{\partial \Theta} - \Gamma_\infty j\omega & \dfrac{\partial r_1}{\partial C_A} & \dfrac{\partial r_1}{\partial C_C} \end{bmatrix} \begin{bmatrix} \dfrac{\tilde{i}}{\tilde{\eta}} \\ \dfrac{\tilde{\Theta}}{\tilde{\eta}} \\ \dfrac{\tilde{C}_C(0)}{\tilde{\eta}} \\ \dfrac{\tilde{C}_A(0)}{\tilde{\eta}} \end{bmatrix} \tag{6.20}$$

$$A = \begin{vmatrix} \dfrac{1}{F} & \dfrac{\partial r_0}{\partial \theta_\mathrm{B}} & \dfrac{\partial r_0}{\partial C_\mathrm{A}} & \dfrac{\partial r_0}{\partial C_\mathrm{C}} \\ -\dfrac{1}{2F} & 0 & \sqrt{j\omega D_\mathrm{A}} & 0 \\ \dfrac{1}{2F} & 0 & 0 & \sqrt{j\omega D_C} \\ 0 & \dfrac{\partial r_1}{\partial \theta_\mathrm{B}} - \Gamma_\infty j\omega & \dfrac{\partial r_1}{\partial C_\mathrm{A}} & \dfrac{\partial r_1}{\partial C_\mathrm{C}} \end{vmatrix} \tag{6.21}$$

p. 153, Eq. (6.22), (6.23), (6.24)

$$T = \begin{vmatrix} -\dfrac{\partial r_0}{\partial \eta} & \dfrac{\partial r_0}{\partial \theta_B} & \dfrac{\partial r_0}{\partial C_A} & \dfrac{\partial r_0}{\partial C_C} \\ 0 & 0 & \sqrt{j\omega D_A} & 0 \\ 0 & 0 & 0 & \sqrt{j\omega D_C} \\ -\dfrac{\partial r_1}{\partial \eta} & \dfrac{\partial r_1}{\partial \theta_B} - \Gamma_\infty j\omega & \dfrac{\partial r_1}{\partial C_A} & \dfrac{\partial r_1}{\partial C_C} \end{vmatrix} \tag{6.22}$$

$$\begin{aligned} T &= \sqrt{D_A D_C}\left[\Gamma_\infty \frac{\partial r_0}{\partial \eta}(j\omega)^2 + \left(-\frac{\partial r_0}{\partial \eta}\frac{\partial r_1}{\partial \theta} + \frac{\partial r_0}{\partial \theta}\frac{\partial r_1}{\partial \eta}\right)(j\omega)\right] \\ &= a_4 (j\omega)^2 + a_2 (j\omega) \end{aligned} \tag{6.23}$$

$$\begin{aligned} A &= -\frac{1}{2F}\left[\begin{array}{l} 2\sqrt{D_A D_C}\,\Gamma_\infty (j\omega)^2 \\ +\Gamma_\infty\left(\sqrt{D_C}\dfrac{\partial r_0}{\partial C_A} - \sqrt{D_A}\dfrac{\partial r_0}{\partial C_C}\right)(j\omega)^{3/2} \\ -2\sqrt{D_A D_C}\dfrac{\partial r_1}{\partial \theta}(j\omega) \\ +\left(\begin{array}{l} -\sqrt{D_C}\dfrac{\partial r_0}{\partial C_A}\dfrac{\partial r_1}{\partial \theta} + \sqrt{D_A}\dfrac{\partial r_0}{\partial C_C}\dfrac{\partial r_1}{\partial \theta} \\ +\sqrt{D_C}\dfrac{\partial r_0}{\partial \theta}\dfrac{\partial r_1}{\partial C_A} - \sqrt{D_A}\dfrac{\partial r_0}{\partial \theta}\dfrac{\partial r_1}{\partial C_C} \end{array}\right)(j\omega)^{1/2} \end{array}\right] \\ &= \frac{1}{2F}\left[b_4 (j\omega)^2 + b_3 (j\omega)^{3/2} + b_2 (j\omega) + b_1 (j\omega)^{1/2}\right] \end{aligned} \tag{6.24}$$

p. 152, Eq. (6.27)

$$\begin{aligned} \hat{Z}_f &= \frac{1}{2F}\frac{b_4}{a_4} + \frac{1}{2F}\frac{b_4}{a_4}\left[\frac{\dfrac{b_3}{b_4}(j\omega) + \left(\dfrac{b_2}{b_4} - \dfrac{a_2}{a_4}\right)(j\omega)^{1/2} + \dfrac{b_1}{b_4}}{(j\omega)^{3/2} + \dfrac{a_2}{a_4}(j\omega)^{1/2}}\right] \\ &= R_{ct} + \frac{1}{2F}\left[\frac{\dfrac{b_3}{a_4}(j\omega) + \left(\dfrac{b_2}{a_4} - \dfrac{a_2 b_4}{a_4^2}\right)(j\omega)^{1/2} + \dfrac{b_1}{a_4}}{(j\omega)^{1/2}\left[(j\omega) + \dfrac{a_2}{a_4}\right]}\right], \\ &= R_{ct} + \frac{1}{2F}\left[\frac{\dfrac{b_3}{a_2}(j\omega) + \left(\dfrac{b_2}{a_2} - \dfrac{b_4}{a_4}\right)(j\omega)^{1/2} + \dfrac{b_1}{a_2}}{(j\omega)^{1/2}\left[(j\omega)\dfrac{a_4}{a_2} + 1\right]}\right] \end{aligned} \tag{6.27}$$

p. 152, Eq. (6.28)

$$\hat{Z}_\mathrm{f} = R_\mathrm{ct} + \frac{1}{j\omega C_\mathrm{p} + \frac{1}{R_\mathrm{p}}} + Z_\mathrm{W} = R_\mathrm{ct} + \frac{1}{j\omega C_\mathrm{p} + \frac{1}{R_\mathrm{p}}} + \frac{\sigma}{\sqrt{j\omega}}$$
$$= R_\mathrm{ct} + \frac{(j\omega)R_pC_p\sigma + R_p(j\omega)^{1/2} + \sigma}{(j\omega)^{1/2}\left[(j\omega)R_pC_p + 1\right]} \qquad (6.28)$$

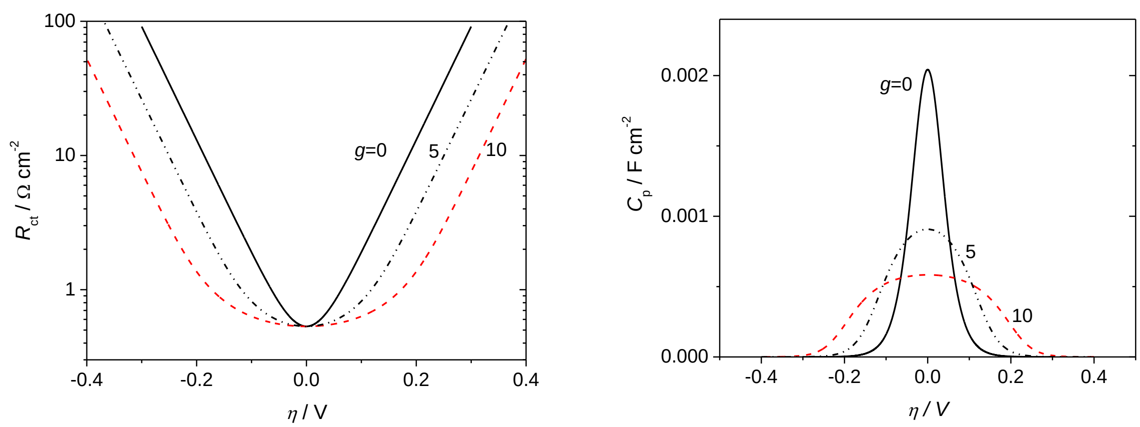
p. 153, Eq. (6.29)

$$R_\mathrm{ct} = \frac{1}{2F}\frac{b_4}{a_4};\; R_\mathrm{p} = \frac{1}{2F}\left(\frac{b_2}{a_2} - \frac{b_4}{a_4}\right);\; C_\mathrm{p} = 2F\frac{b_3}{b_1}\frac{1}{\left(\frac{b_2}{a_2} - \frac{b_4}{a_4}\right)};$$
$$\sigma = \frac{1}{2F}\frac{b_1}{a_2};\; b_1 = \frac{a_2 b_3}{a_4} \qquad (6.29)$$

p. 157, Fig. 7.1, there is: “continuous line Langmuir isotherm, g = 1”

should be: “continuous line Langmuir isotherm, g = 0”

Corrected figure:



p. 160, Eqs. (7.19)-(7.20)

$$k_3 = k_3^0\Gamma_\infty^2$$
$$k_{-3} = k_{-3}^0\Gamma_\infty^2 a_{\mathrm{H}_2}^* \qquad (7.21)$$

p. 161, Eq. (7.23)

$$v_2 = v_2^0 \left[\begin{array}{l} \left(\frac{\theta_H}{\theta_H^*}\right)\left(\frac{a_{H_2O}}{a_{H_2O}^*}\right)\exp(-\beta_2 f\eta) \\ -\left(\frac{1-\theta_H}{1-\theta_H^*}\right)\left(\frac{a_{H_2}}{a_{H_2}^*}\right)\left(\frac{a_{OH^-}}{a_{OH^-}^*}\right)\exp\left[(1-\beta_2) f\eta\right] \end{array} \right] \tag{7.23}$$

p. 161, Eq. (7.27)

$$v_3^0 = \frac{k_3^0 k_{-3}^0 \Gamma_\infty^2 a_{H_2}^*}{\left(\sqrt{k_3^0} + \sqrt{k_{-3}^0 a_{H_2}^*}\right)^2} = \frac{k_3 k_{-3}}{\left(\sqrt{k_3} + \sqrt{k_{-3}}\right)^2} \tag{7.27}$$

p. 161, Eq, (7.30)

$$\frac{k_1 k_2}{k_{-1} k_{-2}} = \frac{k_1^2 k_3}{k_{-1}^2 k_{-3}} = \frac{k_{-2}^2 k_3}{k_2^2 k_{-3}} = 1 \tag{7.30}$$

p. 193, Eq. (8.28)

$$\hat{C} = \frac{1}{j\omega\left(\hat{Z}_{tot} - R_s\right)} = C_{dl} + \frac{1}{\frac{1}{C_{ad}} + \sigma_{ad}\sqrt{j\omega} + R_{ad}} \tag{8.28}$$

p. 205, l. 8

$\hat{Z}_s = 1/(j\omega C_{dl} 2\pi rl)$

p. 207,

Fig. 9.3, legend.

For **corrected version** of the chapter see: A. Lasia, Impedance of porous electrodes in the presence of electroactive species, J. Electroanal. Chem., 923 (2023) 117280, https://doi.org/10.1016/j.jelechem.2023.117280.

p. 235, Eq. (9.70)

$$\hat{Y}_{f,tot} = (2\pi rl)\int_0^1 \hat{Y} dz \tag{9.70}$$

p. 236, Eq. (9.71)

$$\hat{Y}_{\mathrm{f}}\,,\mathrm{tot} = (2\pi rl)u \left\{ \begin{array}{l} \left(\frac{P}{1+P}\right)\left(1-\frac{B}{K}\right)+\left[\frac{\alpha-(1-\alpha)P}{1+P}\right]\left(1-\frac{B}{K}\right)\frac{\tanh\sqrt{B}}{\sqrt{B}} \\ +\left(\frac{P}{1+P}\right)\frac{B}{K}\frac{\tanh\sqrt{K}}{\sqrt{K}} \\ +\left[\frac{a-(1-\alpha)P}{1+P}\right]\frac{\left(\frac{B}{K}\right)\sqrt{K}\tanh\left(\sqrt{K}\right)-\sqrt{B}\tanh\left(\sqrt{B}\right)}{K-B} \end{array} \right\} \qquad (9.71)$$

It can be also represented in an alternative simpler form as:

$$\hat{Y}_{f,tot} = \left(2\pi rl\right)u \left[\begin{array}{l} \left(\frac{P}{1+P}\right)\left(1-\frac{B}{K}\right)+\left(\alpha-\frac{P}{1+P}\right)\left(1-\frac{B}{K-B}\right)\frac{\tanh\sqrt{B}}{\sqrt{B}} \\ +\left[\left(\frac{P}{1+P}\right)\frac{B}{K}+\left(\alpha-\frac{P}{1+P}\right)\frac{B}{K-B}\right]\frac{\tanh\sqrt{K}}{\sqrt{K}} \end{array} \right] \qquad 9.71)$$

p. 236, Eq. (9.72) surface area is missing:

$$\hat{Y}_{\mathrm{f,tot}}(\omega \to 0) = \frac{1}{R_{\mathrm{p}}} = (2\pi rl)u \left[\begin{array}{l} \frac{P}{1+P}\frac{\tanh\sqrt{B}}{\sqrt{B}} \\ +\left(\frac{\alpha-(1-\alpha)P}{1+P}\right)\left(\frac{1}{2}+\frac{\tanh\sqrt{B}}{2\sqrt{B}}-\frac{1}{2}\tanh^2\sqrt{B}\right) \end{array} \right] \qquad (9.72)$$

which might be simplified into:

$$\hat{Y}_{\mathrm{f,tot}}(\omega \to 0) = \left(2\pi rl\right)\frac{u}{2}\left[\left(\alpha-\frac{P}{1+P}\right)\frac{1}{\cosh^2\left(\sqrt{B}\right)}+\left(\alpha+\frac{P}{1+P}\right)\frac{\tanh\left(\sqrt{B}\right)}{\sqrt{B}}\right]$$

p. 236, Eq. 9.73)

$$\hat{Y}_{\mathrm{f,tot}}(\omega \to \infty) = \frac{1}{R_{\mathrm{t}}} = (2\pi rl)u\left[\frac{P}{1+P}+\left(\frac{\alpha-(1-\alpha)P}{1+P}\right)\frac{\tanh\sqrt{B}}{\sqrt{B}}\right] \qquad (9,73)$$

p. 236, Eq. (9.74)

$$\hat{Y}_{\text{f,tot}}(\omega \to \infty) - \hat{Y}_{\text{f,tot}}(\omega \to 0) =$$
$$(2\pi rl)u\left[\begin{array}{l} \dfrac{P}{1+P}\left(1-\dfrac{\tanh\sqrt{B}}{\sqrt{B}}\right)+\left(\dfrac{\alpha-(1-\alpha)P}{1+P}\right)\dfrac{\tanh\sqrt{B}}{\sqrt{B}} \\ +\left(\dfrac{\alpha-(1-\alpha)P}{1+P}\right)\left(-\dfrac{\tanh\sqrt{B}}{2\sqrt{B}}-\dfrac{1}{2}+\dfrac{1}{2}\tanh^2\sqrt{B}\right) \end{array}\right] \quad (9.74)$$

p. 237, Eq. (9.76)

$$\hat{Y}_{\text{f,tot}} = (2\pi rl)u\left[\frac{P}{1+P}+\frac{1}{2}\left(\frac{1-P}{1+p}\right)\right] = 0.5(2\pi rl)u$$

p. 237, Eq. (9.77)

$$\begin{aligned} \hat{Y}_{\text{t,tot}}(\omega \to \infty) &= \frac{(2\pi rl)u\alpha}{\sqrt{B}} \\ \hat{Y}_{\text{t,tot}}(\omega \to 0) &= \frac{1}{2}\frac{(2\pi rl)u\alpha}{\sqrt{B}} \end{aligned} \quad (9.77)$$

p. 240, Eq. (9.87)

$$\begin{aligned} \hat{Y}_{\text{f}}\text{,tot} = {} & u_2\left(1-\frac{B}{K}\right)+u_3\left(1-\frac{B}{K}\right)\frac{\tanh\sqrt{B}}{\sqrt{B}}+u_2\,\frac{B}{K}\,\frac{\tanh\sqrt{K}}{\sqrt{K}} \\ & +u_3\,\frac{\left(\frac{B}{K}\right)\sqrt{K}\,\tanh\left(\sqrt{K}\right)-\sqrt{B}\,\tanh\left(\sqrt{B}\right)}{K-B} \end{aligned} \quad (9.87)$$

or in a simpler form:

$$Y_{f,tot} = 2\pi rl\left[\begin{array}{l} u_2\left(1-\dfrac{B}{K}\right)++u_3\left(1-\dfrac{B}{K-B}\right)\dfrac{\tanh\sqrt{B}}{\sqrt{B}} \\ +\left(u_2\,\dfrac{B}{K}+u_3\,\dfrac{B}{K-B}\right)\dfrac{\tanh\sqrt{K}}{\sqrt{K}} \end{array}\right]$$

p. 338

There is:

$Hg|Hg_2SO_4|SO_2^{2-}$

Should be:

$Hg|Hg_2SO_4|SO_4^{2-}$