List of misprints and corrections for
"Relativistic Quantum Mechanics", Macmillan, 1972

pxiv eighth line from bottom, replace '$p^\mu(-e/c)A^\mu$' by '$p^\mu - (e/c)A^\mu$'

p1 last line, insert integral sign on left hand side of equation

p3 replace eq. (-1.11) by
'$\frac{\boldsymbol{p}^2}{2m}\psi(\boldsymbol{p}) + \frac{1}{(2\pi\hbar)^3}\int V(\boldsymbol{p}-\boldsymbol{p}')\psi(\boldsymbol{p}')\mathrm{d}^3\boldsymbol{p}' = E\psi(\boldsymbol{p})$';
after (-1.11) delete sentence ' In (-1.11).....$V(\boldsymbol{p})$'. '

p4 in second term on LHS of (-1.16) replace '$2mc$' by 'mc';
in last (unnumbered) equation replace '$\boldsymbol{x} \times -\mathrm{i}\hbar$' by '$\boldsymbol{x} \times -\mathrm{i}\hbar\boldsymbol{\nabla}$'

p5 in first line after (-1.21) replace '$a_\mathrm{f}(t)^2$' by '$|a_\mathrm{f}(t)|^2$'

p7 on LHS of (-1.30) replace '$|a_\mathrm{f}^{(1)\ 2}$' by '$|a_\mathrm{f}^{(1)}|^2$'

p8 in (-1.34) replace '$E_\mathrm{m} - E_\mathrm{n}$' by '$E_\mathrm{i} - E_\mathrm{n}$'

p10 in footnote replace 'i.e. $\boldsymbol{p}$' by 'i.e. $\hat{\boldsymbol{p}}$'

p11 on RHS of (-1.42) the first term should be multiplied by
'$\exp\left[\mathrm{i}(\frac{E_\mathrm{f}-E_\mathrm{i}}{\hbar} - \omega)t/2\right]$'
and the second term should be multiplied by
'$\exp\left[\mathrm{i}(\frac{E_\mathrm{f}-E_\mathrm{i}}{\hbar} + \omega)t/2\right]$'

p21 in second line of last paragraph replace 'two simple wave equations' by 'two simple decoupled wave equations'

p29 in line 1 replace 'π^-' by 'π^+'; in line 11 replace 'π^-' by 'π^+'

p35 in (2.4) replace '$\frac{m^2c^2}{\hbar^2}\Big)$' by '$\frac{m^2c^2}{\hbar^2}\Big)\ \psi$'

p57 line 12 after (3.22) replace '$e(p_\mathrm{C} - p_\mathrm{B})^\nu$' by '$e(p_\mathrm{C} - p_\mathrm{D})^\nu$';
in Figure 3.10, replace '$-ie(p_\mathrm{C} - p_\mathrm{D})_\nu$' by '$-ie(p_\mathrm{C} - p_\mathrm{D})^\nu$

p59 second equation should have equation number (4.2)

p77 fourth line after (5.16) replace '-1.4' by '-1.5'

p84 on RHS of third (unnumbered) equation replace '$-m_2$' by '$-m^2$'

p88 second line after (5.30) delete 'of this book'

p95 in (6.1) replace '$\frac{1}{\sqrt{2}}(1,\mathrm{i},0)$' by '$-\frac{1}{\sqrt{2}}(1,\mathrm{i},0)$';
in the second of equations (6.2) replace '$\left(\boldsymbol{\nabla}+\frac{\partial\phi}{c\partial t}\right)$' by '$\left(\boldsymbol{\nabla}.\mathbf{A}+\frac{\partial\phi}{c\partial t}\right)$'

p98 fourth line above (6.15) replace 'with the speed' by 'with nearly the speed'

p102 in fourth line of second paragraph replace 'figure (3.9).' by 'figure (3.9)).'

p108 on LHS of (7.10) replace '$\frac{e}{2mc}$' by '$\frac{e}{mc}$'

p113 three lines after (7.35) replace '(1.35)' by '(7.35)'

p115 first line after (7.43) replace '$\phi(\boldsymbol{x})=\phi'(\boldsymbol{x}')$' by '$\phi(\boldsymbol{x})=\phi(\boldsymbol{x}')$'

p122 on LHS of (8.3) replace '$\hat{E}^2\times\psi$' by '$\hat{E}^2\psi$'

p123 in the **Proof** of (i) delete '$\hat{E}=\mathrm{i}\hbar\frac{\partial}{\partial t}=$'

p124 second line after (8.7) insert '.' before 'This'

p125 fifth line after (8.11) replace '(7.20)).' by '(7.20))'

p129 in first line replace '$(-(m^2c^2+\boldsymbol{p}^2)^{1/2}-\boldsymbol{p})$' by '$(-(m^2c^2+\boldsymbol{p}^2)^{1/2},-\boldsymbol{p})$';
in fourth line after(8.30) replace ' 'negative four-momentum ' by ' 'negative four-momentum' '

p130 last line of second paragraph replace 'section 8.5' by 'section 8.4'

p133 line before (8.48) replace '$\boldsymbol{\sigma}.\boldsymbol{p}\phi$' by '$c\boldsymbol{\sigma}.\boldsymbol{p}\phi$';
on LHS and on RHS of (8.48) replace '$\boldsymbol{\sigma}.\boldsymbol{p}\phi$' by '$c\boldsymbol{\sigma}.\boldsymbol{p}\phi$';
four lines below (8.49) replace '$\boldsymbol{\sigma}.\boldsymbol{p}\phi_-$' by '$c\boldsymbol{\sigma}.\boldsymbol{p}\phi_-$';
in (8.50) replace '$|\boldsymbol{p}|\phi_+$' by '$c|\boldsymbol{p}|\phi_+$' and replace '$-|\boldsymbol{p}|\phi_-$' by '$-c|\boldsymbol{p}|\phi_-$'

p134 replace RHS of (8.52) by '$\mathrm{i}\hbar c\boldsymbol{\nabla}\psi^\dagger.\boldsymbol{\alpha}+\psi^\dagger\beta mc^2$';
in second line after (8.52) insert ' , ' before 'then' ;
in bracket on RHS of (8.53) replace '$\psi\boldsymbol{\alpha}.\boldsymbol{\nabla}\psi^\dagger$' by '$\boldsymbol{\nabla}\psi^\dagger.\boldsymbol{\alpha}\psi$'

p135 second line of section 8.6 replace '8.6' by '8.5'

p136 line 25 replace '(absorption of' by '(absorption) of'

p140 line 1 replace equation by
'$\boldsymbol{\sigma}.\boldsymbol{\nabla}(V(\boldsymbol{x})\boldsymbol{\sigma}.\boldsymbol{\nabla}) = (\boldsymbol{\nabla}V(\boldsymbol{x})).\boldsymbol{\nabla} + \mathrm{i}\boldsymbol{\sigma}.((\boldsymbol{\nabla}V(\boldsymbol{x})) \times \boldsymbol{\nabla}) + V(\boldsymbol{x})\boldsymbol{\nabla}^2$';
delete the sentence 'Thus $E'\Psi = \hat{\boldsymbol{p}}^2/2m + V +$ terms of order $\boldsymbol{v}^2/c^2$.';
replace the second equation of part (c) by '$E'\left(1 + \frac{\hat{\boldsymbol{p}}^2}{4m^2c^2}\right)\Psi = \left\{\frac{\hat{\boldsymbol{p}}^2}{2m} + V\left(1 + \frac{\hat{\boldsymbol{p}}^2}{4m^2c^2}\right) - \frac{\mathrm{i}\hbar}{4m^2c^2}\boldsymbol{\nabla}V.\hat{\boldsymbol{p}} + \frac{\hbar}{4m^2c^2}\boldsymbol{\sigma}.(\boldsymbol{\nabla}V \times \hat{\boldsymbol{p}})\right\}\Psi$';
in part (e), two lines above the equation $E'\Psi' =$ etc., replace 'Ψ' by 'Ψ'';
on RHS of equation '$E'\Psi' =$ etc., replace '$\frac{\hat{\boldsymbol{p}}^2}{2m}$' by '$\frac{\hat{\boldsymbol{p}}^2}{2m} + V$', and replace '$\frac{\hat{\boldsymbol{p}}^4}{8m^2c^2}$' by '$\frac{\hat{\boldsymbol{p}}^4}{8m^3c^2}$'

p142 in (9.4) replace 'N' by '$\frac{N}{L^{3/2}}$';
first line after (9.4) replace '(9.2)' by '(9.3)'

p146 on RHS of (9.20) replace '$\mathrm{u}(p_\mathrm{i},2)|^2$' by '$\mathrm{u}(p_\mathrm{i},2)|^2\}$'

p154 second line of **Exercise 9.8** replace '$\mathrm{q_iA_j}$' by '$\mathrm{q_iA_ju_i}$'

p157 in last line replace 'Check' by 'check'

p160 in third line below Figures 10.4 and 10.5 replace '$\hat{}\,\mu$' by '$\hat{p}^\mu$'

p164-5 the last four sentences of section 10.3.1 (beginning four lines from the bottom of page 164 and continuing on page 165: 'Since this change.....the finite measured charge.') should appear after 'the value of e.' in line 2 of the second paragraph on page 164;
in first (unnumbered) equation after (9.52) replace '$\left\{1 - \frac{\alpha}{3\pi}\mathrm{lg}\left(\frac{M^2}{m^2}\right) + \mathrm{O}(q^2)\right\}$' by '$\left\{1 - \frac{\alpha}{3\pi}\mathrm{lg}\left(\frac{M^2}{m^2}\right) + \mathrm{O}(q^2)\right\}^{(1/2)}$';
after this equation, insert the sentence 'The power of 1/2 arises from associating the modification symmetrically between the electron current and the fixed source current (see section 2.5).';
replace eq. number '(10.11)' on p164 by '(10.12)';
on RHS of the equation originally numbered (10.11) replace '$e^2\left\{1 - \frac{\alpha}{3\pi}\mathrm{lg}\left(\frac{M^2}{m^2}\right)\right\}$'

by '$e\left\{1-\frac{\alpha}{3\pi}\lg\left(\frac{M^2}{m^2}\right)\right\}^{1/2}$';
fourth line from bottom of p164 replace '$p_{\rm i}=p_{\rm f}$.' by '$p_{\rm i}=p_{\rm f}$. This then reproduces (10.11), to this order.';
p165 renumber '(10.12)' as '(10.11)'

p176 three lines from bottom replace '8.4' by '8.6'

p177 in eq. (11.36) replace '$v^\dagger$' by '$(-e)v^\dagger$'

p193 three lines after (12.56) replace '$-\mathbf{u}$)' by '$-\mathbf{u}$'

p198 line 5 replace '$\nu_{\rm e}$' by '$\bar{\nu}_{\rm e}$'

p217 in the unnumbered equation, replace '$(p+p')_\mu-\frac{(g^{\mu\nu}-q^\mu q^\nu/m_\rho^2)}{q^2-m_\rho^2}$' by '$(p+p')_\mu\frac{-(g^{\mu\nu}-q^\mu q^\nu/m_\rho^2)}{q^2-m_\rho^2}$',

p221 in third line of **P13.3**(b) replace '$(q^2/4M^2)$' by '$\kappa(q^2/4M^2)$', and replace '$G_{\rm n}$' by '$G_{\rm M}$'

p233 two lines before eq. (14.18) replace '$J^\nu_{\rm weak}$' by '$\hat{J}^\nu_{\rm weak}$'

p242 line 3 of **P14.4** replace '(4.2)' by 'section 4.2'