Comments to the book by W. N. Bailey,
Generalized hypergeometric series

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These are errata and comments to the book

W. N. Bailey, *Generalized hypergeometric series*, Cambridge University Press, 1935; reprinted by Hafner, 1972.

The two errata were communicated to me by George Gasper.

p.32, §4.5, formula (1), first line: On the left-hand side skip the lower semicolon.

p.93, l.3 For $n = 2$ this formula yields

$$ {}_3F_2\left(\begin{matrix} a, b, f+1 \\ e, f \end{matrix}; 1\right) = \frac{\Gamma(e)\Gamma(e-a-b)}{\Gamma(e-a)\Gamma(e-b)}\left(1 - \frac{ab}{(a+b-e+1)f}\right). \tag{1} $$

Hence we get by Taylor series expansion at $z = 1$ that, for $n \in \mathbb{Z}_{\geq 0}$,

$$ {}_3F_2\left(\begin{matrix} -n, b, f+1 \\ e, f \end{matrix}; z\right) = \frac{\rho(f-e+1)}{(b-e+1)f}\,\frac{(e-b-1)_n}{(e)_n}\,{}_3F_2\left(\begin{matrix} -n, b, \rho+1 \\ -n+b-e+2, \rho \end{matrix}; 1-z\right), \tag{2} $$

where

$$ \rho = \frac{f(-n+b-e+1)+nb}{f-e+1}. \tag{3} $$

This also gives in the paper T. H. Koornwinder, *Orthogonal polynomials with weight function* $(1-x)^\alpha(1+x)^\beta + M\delta(x+1) + N\delta(x-1)$, Canad. Math. Bull. 27 (1984), 205–214 the identitity (2.5) with $N = 0$ and formulas (5.3), (5.4) substituted.

p.95, §10.4, formula (7):
second line: replace in denominator $(v+n-1)(w+n-1)$ by $\Gamma(v+n-1)\Gamma(w+n-1)$;
third line: replace in denominator $\Gamma(v+n-1)$ by $(v+n-1)$;
fifth line: replace in denominator $\Gamma(w+n-1)$ by $(w+n-1)$.