Errata

Relativistic Corrections to the Impulse Approximation in Elastic Electron-Deuteron Scattering, FRANZ GROSS [Phys. Rev. **142**, 1025 (1966)]. With the help of N. K. Bewtra, the equations of this paper have been recalculated. The following algebraic mistakes have been found. None of these alter the conclusions of the paper, although they should be noted for future reference.

Equation (1.1) should read

$$\frac{d\sigma}{d\Omega}=\frac{d\sigma}{d\Omega}\bigg|_{\text{N.S.}}\bigg\{G_C^2+\frac{q^4}{18M_d^4}G_Q^2-\frac{q^2}{6M_d^2}\times\bigg[1+2\bigg(1-\frac{q^2}{4M_d^2}\bigg)\tan^2(\tfrac{1}{2}\theta)\bigg]G_M^2\bigg\}.$$

The right-hand side of Eq. (1.2) should be multiplied by a factor of e, the electronic charge, and the coefficient of G_M should be $1/(4M)$ instead of $1/(2M_d)$. The large bracket multiplying the first term of the expression for G_M in Eq. (1.3) should be replaced by

$$[(1+\mathbf{q}^2/32M^2)F_C-(F_C-F_M)(3\mathbf{q}^2/16M^2)].$$

The coefficient of Δ^ν in Eq. (2.4) should be $(2/\pi)^{1/2}$ instead of $(2\pi)^{1/2}$, and in the discussion immediately following this equation the normalization of the deuteron polarization vector should read $\xi_\mu\xi^\mu=-1$.

A factor of $\alpha^4/2M^2$ should be subtracted from the right-hand side of Eq. (2.12).

The sign of the $w_2(r)$ term in $A'(t_0)$ [Eq. (2.15)] should be minus instead of plus. This means that the $\sqrt{2}w_2'$ term in ϕ_1 [Eq. (2.16)] should not appear. Equation (3.2) should read

$$F^\mu(q)=F_1(q^2)\gamma^\mu+i[F_2(q^2)\sigma^{\mu\nu}/2M](p_2-p_1)_\nu.$$

The wave function ψ, Eq. (A2), becomes

$$\psi_1{}^0=\tfrac{1}{12}u+(1/24)xu'+(1/12\sqrt{2})w,$$
$$\psi_1{}^1=-\tfrac{1}{2}u+\tfrac{1}{2}xu'+\tfrac{1}{4}\mathcal{K}u+(1/\sqrt{2})w,$$
$$\psi_1{}^2=-\tfrac{1}{12}u+\tfrac{1}{12}xu'+(1/6\sqrt{2})w,$$
$$\psi_2{}^0=(1/24)xw',$$
$$\psi_2{}^1=\tfrac{1}{2}xw'-3w+\tfrac{1}{4}\mathcal{K}w,$$
$$\psi_2{}^2=\tfrac{1}{12}xw'-\tfrac{1}{4}w,$$
$$\psi_3=+\tfrac{1}{4}u-\tfrac{1}{4}xu'-(1/2\sqrt{2})w-(1/4\sqrt{2})xw',$$
$$\psi_4{}^0=-\tfrac{3}{2}w,$$
$$\psi_4{}^1=\tfrac{3}{8}w.$$

Note that the w_I term no longer appears. In Eq. (A4) a factor of $(q^2/4M^2)(F_C-F_M)i\vec{\nabla}^k/M$ should be subtracted from the right-hand side of j^k. Finally, the expressions given at the end of the Appendix must be modified. I_C, I_Q, $I_M{}^1$, and J_C are correct as they are. The coefficient of $P_2(z)$ in $I_M{}^2$ should be replaced by

$$-(1/2\sqrt{2})(w\psi_1+\sqrt{2}w\psi_2+u\psi_2).$$

The right-hand side of J_Q should be multiplied by i so that it reads

$$J_Q=-6\sqrt{2}i\sum\{\cdots\}.$$

The coefficient of $j_2(\tau)$ in the first term of $J_M{}^1$ is

$$(1/\sqrt{2})(\tfrac{1}{2}u\hat{w}+\tfrac{1}{2}w\hat{u}+w\hat{w}/\sqrt{2})$$

instead of

$$(1/\sqrt{2})(u\hat{w}+w\hat{w}/\sqrt{2}).$$

The sign of the entire right-hand side of $J_M{}^2$ should be changed, and *after* making this change the term

$$\frac{1}{2M^2}\sum\frac{w}{\sqrt{2}}\bigg(\frac{5}{2\sqrt{2}}\frac{w'}{x}+\frac{1}{2\sqrt{2}}w''+\frac{2}{\sqrt{2}}\frac{w}{x^2}\bigg)P_2(z)$$

should be added to the right-hand side.

These changes alter Eqs. (4.7) and (4.8) slightly, with the end result that

$$S\approx-1/(8M^2).$$

A quantitative discussion of these corrections will be presented elsewhere.

Evaluation of Meson-Baryon Coupling Constants from Current Divergences, K. RAMAN [Phys. Rev. **149**, 1122 (1966)]. (A) The coupling constants G as defined in this paper (see footnote 8) differ by numerical factors $f\begin{pmatrix}1 & a & 2\\ \alpha & \beta & \gamma\end{pmatrix}$ from the usual Yukawa coupling constants. To obtain the usual coupling constants [and to correct an error in the second term on the right-hand side of (8)], the terms on the right of Eq. (8) corresponding to the $\Sigma\Lambda\pi$, $\Sigma\Sigma\pi$, ΛNK, $\Xi\Lambda K$, $\Xi\Sigma K$, $NN\eta$, and $\Xi\Xi\eta$ vertices should be multiplied by $2/\sqrt{3}$, 2, $-\sqrt{3}$, $\sqrt{3}$, -1, $\sqrt{3}$, and $-\sqrt{3}$, respectively, and so also the corresponding terms in the first row of each of Tables I–III. The values of $G^2/4\pi$ for the $\Sigma\Lambda\pi$ and $\Sigma\Sigma\pi$ vertices should be multiplied by $\frac{4}{3}$ and 4, respectively; and for each of the vertices ΛNK, $\Xi\Lambda K$, $NN\eta$, and $\Xi\Xi\eta$, by 3. The values of $G^2/4\pi$ for the $\Sigma\Lambda\pi$, $\Sigma\Sigma\pi$, ΛNK, and $\Xi\Xi\eta$ vertices given in Table III are then replaced by 12.5, 11.6, 16.8, and 27.6, respectively.

This value of $G_{\Lambda NK}{}^2/4\pi$ is much larger than the recent experimental estimate of 4.8 ± 1.0 from KN forward dispersion relations [M. Lusignoli, M.

Restignoli, G. A. Snow, and G. Violini, Phys. Letters **21**, 229 (1966)]; these authors also give $G_{KN\Sigma}^2/4\pi \lesssim 3.2$.

However, recent work by N. Brene, L. Veje, M. Roos, and C. Cronström, Phys. Rev. **149**, 1288 (1966) suggests a revised estimate of the parameters for weak leptonic decays, assuming $R \equiv (C_K/\mu_K^2)/(C_\pi/\mu_\pi^2) \approx 1$, and giving $\theta_V = 0.212 \pm 0.004$, $\theta_A = 0.268 \pm 0.001$, $(d/f)_A \approx 1.99$. As pointed out by Cabibbo [N. Cabibbo (private communication)], one may alternatively fit the data with $\theta_A \approx \theta_V = 0.212 \pm 0.004$, and with R different from 1; the data quoted by Brene *et al.* give $R = 1.27 \pm 0.02$. Using this new value for R, one obtains $\bar{G}_{\Lambda NK}^2/4\pi \approx 9.6$.

Noting that $\bar{G} = GK(0)$, agreement with the experimental estimate would be obtained if $K(0) \approx 1.4 \pm 0.1$ for the ΛNK vertex. Assuming $K(0) \approx 1.4$ for all the vertices $KN\Lambda$, $KN\Sigma$, $K\Lambda\Xi$, and $K\Sigma\Xi$ gives $G^2/4\pi$ for these as 4.9, 0.66, 0.32, and 8.2, respectively, for $(d/f)_A \approx 1.99$. The estimate of $G_{KN\Sigma}^2/4\pi$ is well within the experimental upper limit.

Finally, we note that the new value of C_K/C_π also improves the agreement with experiment of the $I=1$ KN S-wave scattering length calculated from the hypothesis of partially conserved axial-vector current and current commutation relations. This will be further discussed in a paper by E. C. G. Sudarshan and the author.

(B) In the remark about the $\Lambda\Lambda\eta$ and $\Sigma\Sigma\eta$ couplings, delete "and are considerably larger than the $\Sigma\Sigma\pi$ coupling," and "while η exchange in $\Sigma\Sigma$ interactions would dominate over π exchange," and read "however, η exchange in $\Sigma\Lambda$ and $\Sigma\Sigma$ interactions would be. . .".

The author is grateful to Dr. F. Gilman for pointing out the error in the definition of the coupling constants and to Dr. N. Cabibbo for a discussion of the new data on leptonic decays.

Final-State Interactions among Three Particles. II. Explicit Evaluation of the First Rescattering Correction, I. J. R. Aitchison and C. Kacser [Phys. Rev. **142**, 1104 (1966)]. (i) The last term of Eq. (2.8) should read

$$+(W^2m_3^2 - m_1^2m_2^2)(W^2 - m_1^2 - m_2^2 + m_3^2).$$

(ii) The line above Eq. (3.3) should read "of Fig. 6 [cf. Eq. (A4)], which is *by definition* $M_R = -hg/(t - m_R^2) = \cdots$".

(iii) Throughout the paper m_R, $Q_{R\to 13}$, and $Q_{W\to R2}$ are considered to be *complex*, in particular, $\mathrm{Im}\, m_R = -\Gamma/2$. In the kinematical parts, the equations of Sec. 2B are to be taken as complex equations, so that, in particular, Eq. (2.17) does lead to a complex value for E_{23S}. Then $\mathrm{Re}(E_{23S})$ gives the "position" of the physical triangle singularity, while $\mathrm{Im}(E_{23S})$ indicates its "width". The effect of $\mathrm{Im}\, m_R$ can be quite large and decreases the value of $\mathrm{Re}(E_{23S})$. The end of the sixth sentence after Eq. (3.6) should therefore be rephrased to read "and the $i\epsilon$ has the same sign as the imaginary part of $Q_{W\to R2}$, so that the Feynman pole prescription agrees with the explicit prescription arising from $Q_{W\to R2}$. In fact, the Feynman $i\epsilon$ is redundant in the resonance propagator and in all related expressions [for instance, in Eq. (C7), and the following equation in Appendix C], but may be retained as an indication of how $\mathrm{Im}(Q_{W\to R2})$ would enter." [Cf. B. N. Valuev cited in (ix) below.]

(iv) The left-hand sides of Eqs. (3.11) and (3.12) should read $\begin{Bmatrix} q_S \\ q_N \end{Bmatrix}$ and $\begin{Bmatrix} p_S \\ p_N \end{Bmatrix}$, respectively.

(v) In Eqs. (4.5) and (4.6) the coefficient of the logarithm should be divided by c^3.

(vi) The fourth sentence above Eq. (5.1) which refers to the first iteration is not correct for all mass ratios $m_1:m_2:m_3$ (though it is correct for the equal-mass case). For general masses, higher order singularities can occur in the physical region, but are of a different character and are progressively weaker. See G. Bonnevay, Nuovo Cimento **30**, 1325 (1965) and J. B. Bronzan, Phys. Rev. **134**, B687 (1964).

(vii) In the fourth sentence of the paragraph after Eq. (B4), q_{s-} should read q_S.

(viii) In Eq. (C9) the left-hand side should read M_Δ, while in the second term on the right-hand side $(q^2 - [q_S - (m_2/m_{123})p_S]^2)$ should read $(p^2 - [q_S - (m_2/m_{123})p_S]^2)$.

(ix) When this paper was written, the authors were not aware of the pioneering work of B. N. Valuev, Zh. Eksperim. i Teor. Fiz. **47**, 649 (1964) [English transl.: Soviet Phys.—JETP **20**, 433 (1965)].