cerning the nuclear charge distribution. In particular, mu-mesonic x-ray studies,[12] fast electron scattering[11] and other

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12 Val. L. Fitch and James Rainwater, Phys. Rev. 92, 789 (1953);
L. N. Cooper and E. M. Henley, Phys. Rev. 92, 801 (1953);
John A. Wheeler, Phys. Rev. 92, 812 (1953);
D. L. Hill and K. W. Ford, Phys. Rev. 94, 1617 and 1630 (1954)

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experimental results[12, 13] which are sensitive to the nuclear

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13 F. Bitter and H. Feshbach, Phys. Rev. 92, 837 (1953);
B. G. Jancovici, Phys. Rev. 95, 389 (1954);
D. C. Peaslee, Phys. Rev. 95, 717 (1954)

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charge distribution, all agree that the nuclear charge distribution is more compact than had previously been believed to be the case. For a nuclear charge distribution $\rho(r) = \rho_o$ for $r < R = r_o A^{1/3}$, and $\rho(r) = 0$ for $r > R$ the radius R has clear meaning and a best match to the above experiments gives $r_o \approx 1.0$ to 1.2×10^{-13}cm for not too small A. Elementary considerations of quantum mechanics show that such a model cannot be strictly correct, and $\rho(r)$ must be a continuous function of r. In this case, although the different experiments are not always sensitive in the same manner to the shape of $\rho(r)$, the equivalent uniform model r_o is usually taken to be that value which gives the same $\langle r^2 \rangle$ as for the non-uniform $\rho(r)$. Prior to late 1953 the

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