fications due to additional forces (as in the scattering of π mesons from carbon) or due to the finite extension of the nucleus and the subsequent deviations from Coulomb's law inside the nucleus. We consider only the case where relatively small φ are important so the approximation $\varphi \approx \sin\varphi \approx \tan\varphi$ is appropriate.

There has been a good deal of experimental interest recently[5,6]

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[5] E. Amaldi and G. Fidecaro, Nuovo Cimento, 7, 535 (1950); W. L. Whittemore and R. P. Shutt, Phys. Rev. 88, 1312 (1952); E. P. George, J. L. Redding, and P. T. Trent, Proc. Phys. Soc. A66, 533 (1953); B. Leontic and A. W. Wolfendale, Phil. Mag. 44, 1091 (1953).

[6] M. L. T. Kanangara and G. S. Shrikantia, Phil. Mag. 44,1091 (1953).

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in the multiple scattering of μ-mesons. Experimental results, after being compared with the results of the Molière[2] and Olbert[3] multiple scattering theories have been interpreted as indicating the existence of an anomolous μ-meson-nuclear interaction. Among the many difficulties arising in the interpretation of these experiments (see Appendix B), one of the most obvious seemed to be the absence of a reliable estimate of the expected multiple scattering distribution from extended nuclei.

In the Moliere multiple scattering theory the nucleus is treated as a point charge. The single scattering cross section is taken to be the Rutherford cross section modified, at small