[2]D. Kurath, Bull. Am. Phys. Soc. 2, 206 (1957).
[3]General formulas for the polarization and asymmetry are given by F. L. Shapiro, Uspekhi Fiz. Nauk 65, 133 (1958) (unpublished translation by Lydia Venters, Argonne National Laboratory, Lemont, Illinois).
[4]E. R. Andrew, Nuclear Magnetic Resonance (Cambridge University Press, Cambridge, 1955), p. 18.
[5]Lent by Isotopes Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
[6]D. J. Hughes and M. T. Burgy, Phys. Rev. 81, 498 (1951).
[7]F. Ajzenberg-Selove and T. Lauritsen, Nuclear Phys. 11, 1 (1959).
[8]F. J. Low and C. F. Squire, J. Phys. Chem. Solids 5, 85 (1958). These authors give 11 oersteds for the width measured between points for which the second derivative is zero. The corresponding width at half height for a Gaussian shape is 13 oersteds.
[9]R. J. Blin-Stoyle, Theories of Nuclear Moments (Oxford University Press, Oxford, 1957), Chap. 9.
[10]M. E. Rose and H. A. Bethe, Phys. Rev. 51, 205 (1937).
[11]D. Kurath, following Letter [Phys. Rev. Letters 3, 431 (1959)].

MAGNETIC MOMENT CALCULATION FOR Li^8†

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In view of the recent measurement[1] of the nuclear g factor of Li^8, it is of interest to see whether the intermediate-coupling model[2] is consistent with the measurement. The ground state is assumed to be the ($J=2$, $T=1$) state, which is consistent with the experimental evidence and is also the theoretically predicted assignment for the ground state. The calculation has been carried out as a function of the spin-orbit coupling parameter, a/K, for the relative range of nuclear forces given by $L/K=6.8$. These quantities are defined in reference 2.

The resulting values for the magnetic moment are given in Fig. 1, and an intersection[3] of the theoretical curve with the experimental value occurs for $a/K \approx 2.1$. This is consistent with the other evidence[4] for $A=8$, the $M1$ transition width for the 17.6-Mev gamma decay of the ($J=1$, $T=1$) state in Be^8, which leads to a value of $a/K \sim 2.5$. Therefore the intermediate-coupling model is in agreement with the experimental evidence.

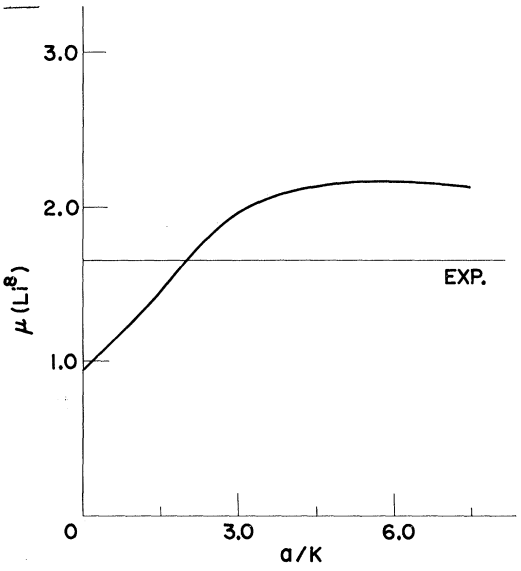

FIG. 1. Magnetic dipole moment of Li^8 in nuclear magnetons as a function of a/K.

†Work performed under the auspices of the U. S. Atomic Energy Commission.
[1]D. Connor, preceding Letter [Phys. Rev. Letters 3, 429 (1959)].
[2]D. Kurath, Phys. Rev. 101, 216 (1956).
[3]There must be at least one more intersection since the value at the jj limit is $\mu=1.25$ nm, but such large values of a/K are not reasonable for a mass number of 8.
[4]D. Kurath, Phys. Rev. 106, 975 (1957).