and finally, from (1) : ..... .

Let us compare the value obtained from (1) with that calculated from the formula for the atomic magnetic moment of pure ferromagnetic metals given in /3/ :

.....R.p. 421 (3)

whwre $m_o = n_d - 2$, n_d = the number of unpaired d electrons in the isolated atom. For iron.....and K_2 = 3.85 magnetons/kxu, d_1 and d_2 are the distances between the atom and its nearest and next-nearest neighbors respectively (for iron d_1 = 2.478 kxu and d_2 = 2.86 kxu), and D is an empirical constant characteristic of the particular transition metal, being 2.73 kxu for iron. The negative sign in front of the third term is (3) is taken if d_2.....D (as it is for iron). Putting the numerical values for iron into (3), we find that m = 2.23 magnetons (experiment gives 2.22). Formula (3) leads to the conclusion : For uniform compression (d_1 and d_2 become smaller), m must fall, and for uniform expansion it must increase.

It is well known that this conclusion is confirmed qualitatively by experiment /1, 2, 4/. For a quantitative estimate of the effect we differentiate (3). We obtain

.....R.p. 422 (4)

In (4) it is supposed that..... . Putting the numerical values for iron (see above) into (4), we obtain.....atm^{-1}, which agrees satisfactorily with our own data at the temperature of liquid nitrogen (lines 4 and 5 in Table 1), but disagrees considerably with /1/ (lines 1 and 5 in Table 1).