obtain the volume dependence of the anisotropy in the p character of the wave function as

$$(\zeta-\eta)\sim V^{-5\pm1.8}. \tag{14}$$

The relative anisotropy is given in Ref. 24 as

$$\frac{K_{ax}}{K_{iso}}\propto\frac{\langle 1/r^3\rangle_p(\zeta-\eta)}{\langle|\phi_s(0)|^2\rangle_F\epsilon}, \tag{15}$$

where ϵ is the coefficient of admixture squared for the s state, and $\langle|\phi_s(0)|^2\rangle_F$ is the average over the Fermi surface of the probability density of an s electron at the nucleus. Experimentally, for tin we have

$$K_{ax}/K_{iso}\sim V^{-5.2\pm1.8}. \tag{16}$$

Assuming $\langle|\phi_s(0)|^2\rangle_F\sim V^{-1}$ from the conditions of normalization, Eqs. (14) and (15) give $K_{ax}/K_{iso}\sim[1/\epsilon(V)]V^{-5\pm1.8}$. Comparison to the experimental results in Eq. (16) indicates that the volume dependence of the relative anisotropy can be accounted for by a volume-dependent anisotropy in the non-s character of the wave function; also the proportion of s and non-s character of the wave function is relatively unaffected by volume changes.

V. CONCLUSIONS

A determination of the volume dependences of the Knight shift in tin, lead, and platinum, and a comparison to the previously measured temperature dependences at constant pressure, have shown the Knight shifts in these metals to be explicitly dependent on temperature at constant volume. The explicit temperature dependences cannot be explained in lead and tin by the effect of lattice vibrations alone if one uses the free-electron volume dependence for the Pauli susceptibility. However, using the much stronger volume dependence of the density of states indicated by pressure studies of the superconducting transition temperature, the lattice vibration hypothesis appears to be able to account for the explicit temperature dependences in lead and also in cadmium. Of course, there is still the possibility of the explicit temperature dependence of the Knight shift being related to an explicit temperature dependence at constant volume of the susceptibility. Without direct measurements of the temperature and pressure dependences of the Pauli susceptibility, much of the speculation concerning this point will remain.

It is difficult to draw any definite conclusions regarding the explicit temperature dependence of the anisotropic Knight shift in tin because of the large errors; however, as in the case of the temperature dependence at constant pressure, the volume dependence is in the opposite direction to that of the isotropic Knight shift. The volume dependence of K_{ax} is primarily due to a volume dependence of the anisotropy in the conduction-electron charge distribution, which could also be responsible for the opposite dependences of $K_{iso}(V)$ and $K_{ax}(V)$.

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Erratum

Hyperfine Structure of the Stable Lithium Isotopes. II, DOUGLAS MCCOLM [Phys. Rev. **142**, 14 (1966)]. A factor of $\frac{1}{2}$ is misplaced in Eq. (21) and it should read:

$$\mathcal{H}_j=-\alpha^2[\tfrac{1}{2}\Lambda_l(r)+\mathcal{V}_P+\mathcal{V}_{EE}].$$