Coulomb Term: The contributions of the Coulomb energy ( $W_c$ ) to the stiffnesses  $C_H$  and  $C_{66}$  were calculated at the observed (c/a) ratio of 1.8855 by an extension of Ewald's method (18) on the assumption that the doubly-charged ion-cores may be approximated by point charges in an electron sea of uniform density. The effective charge of the ion-cores was taken to be 2Ze and the results of the calculations are recorded in Table 3 as a function of  $Z^2$ . The fact that c/a is different from the ideal value of  $(8/3)^{1/2}$  substantially modifies the calculated coulomb stiffness  $C_{H^\circ}$ 

Full Zone Term: In calculating the contributions of the full zone Fermi energy  $(W_F^{\ I})$  the energies of the electron states are taken to be proportional to the free electron energies; the constant of proportionality being the inverse effective-mass ratio (m/m\*). The parameter  $\alpha_0$  is introduced as the inverse effective-mass ratio (m/m\*) for the full zone. The details of the calculations are given in the Appendix and the results are recorded in Table 3 as a function of  $\alpha_0$ .

Overlap-Hole Term: In the calculation of the contribution from the overlap-hole energy ( $W_{\rm F}^{\rm II}$ ), the B and P types of overlaps and the H type of hole were assumed (see Fig. 2.). The Q type overlap has not been observed in cadmium by low field De Haas