Changing the integration variable in Eq. (2), we obtain

$$\Delta_I(\Omega, E) \simeq \frac{N\alpha^2}{Z} \int \mathrm{Re} \frac{\Delta}{[(\Delta+x)^2-\Delta^2]^{1/2}} \times \tfrac{1}{2}[F_\Omega(E-\Delta_1-x)+F_\Omega(E-\Delta_2-x)]dx \ . \quad (3)$$

This expression is the same as that used by Scalapino, Schrieffer, and Wilkins[7] in order to explain the phonon structure in lead, but with an effective phonon density of states given by

$$F_\Omega^{\mathrm{eff}}(E) = \tfrac{1}{2}[F_\Omega(E-\Delta_1-x)+F_\Omega(E-\Delta_2-x)] \ .$$

If one considers the longitudinal peak region, for each value of x and Ω, the two functions F are maxima at $E=\hbar\omega_{ph}+\Delta_{1,2}+x$. In Fig. 2(b) we have plotted, from Bennett's data for the [111] direction, $F_{[111]}(E-\Delta_1)$, $F_{[111]}(E-\Delta_2)$, and $F^{\mathrm{eff}}_{[111]}(E)$. The natural width of the peaks has already washed out most of the multigap effect on $F^{\mathrm{eff}}_{[111]}$.

The mathematical operations relating F^{eff} to the tunneling density of states are a convolution (3) and an angular average (1), the latter yielding a very strong broadening effect, as it mixes curves which are shifted with respect to one another (by 310 μeV for the [111] and [001] directions, for example). This shift must be compared to $|\Delta_2-\Delta_1| = 150$ μeV. Therefore, clearly, a simple phonon peak is expected.

In our experiment, we have used two kinds of Al-Pb junctions. Thin lead films (1000 Å) with short mean free paths give a single gap. Thick annealed lead films (1–8 μ) show a double gap. In each case, the second derivative of the tunneling current has been recorded, and the phonon structure is essentially the same. Especially, as we have asserted at the beginning, in all cases there is no splitting in the phonon structure.

In conclusion, we believe to have shown that there is no splitting in the phonon spectrum due to multigap in a tunneling experiment, in agreement with all the experimental results to date.

We thank M. Belin for his technical assistance and Professor J. Bok for many valuable discussions.

*Work supported in part by Direction des Recherches et Moyens d'Essais, Contract No. 70/147.

[1]B. L. Blackford and R. H. March, Phys. Rev. 186, 397 (1969).

[2]J. M. Rowell and L. Kopf, Phys. Rev. 137, A907 (1965).

[3]W. J. Tomasch, in *Tunneling Phenomena in Solids*, edited by E. Burstein and S. Lundqvist (Plenum, New York, 1968), p. 316.

[4]A. J. Bennett, Phys. Rev. 140, A1902 (1965).

[5]D. J. Scalapino, in *Superconductivity*, edited by R. D. Parks (Marcel Dekker, New York, 1969).

[6]G. M. Eliashberg, Zh. Eksperim. i Teor. Fiz. 38, 966 (1960) [Sov. Phys. JETP 11, 696 (1960)].

[7]D. J. Scalapino, J. R. Schrieffer, and J. W. Wilkins, Phys. Rev. 148, 263 (1966).

PHYSICAL REVIEW B VOLUME 3, NUMBER 11 1 JUNE 1971

ERRATUM

Local Magnetic Fields in the Vanadium-Manganese Alloy System, E. von Meerwall and D. S. Schreiber [Phys. Rev. B 3, 1 (1971)]. The affiliation of the first author should read: Department of Metallurgy and Mining Engineering, *and Materials Research Laboratory*, University of Illinois, Urbana.

On p. 3, first column, the sentence beginning in line 9 of Sec. III should be: "No further distortion is observed above 15% Mn, where about 0.8 of the peak-to-peak intensity per V nucleus which is present in pure V resides in a region somewhat outside the peak-to-peak region of the differential spectrum."

On p. 7, second column, the second sentence in the new paragraph should refer not to a *model* shift, but to the *modal* (most probable) shift.

On p. 20, Appendix C, in the next-to-last equation, a set of parentheses was inadvertently omitted from a denominator $(Z-5)$.