ERRATA

POSSIBILITY OF PHONON-INDUCED SUPERCONDUCTIVITY. P. H. E. Meijer [Phys. Rev. Letters 14, 784 (1965)].

In this Letter a description is given of how high-frequency phonons produced in the barrier between two semiconductors could be used to enhance the Fröhlich attraction between electrons. This interaction due to virtual phonons is proportional to the matrix element squared of the phonon creation operators, and in case there are no phonons initially, the element is equal to one. It was mentioned that this interaction would increase with the number of phonons present in the intermediate state. Simultaneously, however, there is a counter process in which there is a phonon temporarily absorbed.[1] This process leads to a term with the opposite sign and a matrix element that is proportional to $n-1$. Hence the net effect is the same as in the case where phonons were not present. It was incorrectly stated that a strengthening of the interaction would lead to a higher transition temperature; it would, of course, lead to an increased chance to compensate the electrostatic interaction, but since the phonons, as mentioned above, are not effective in doing so, at least not in a second-order process, the effect can be ruled out.

I would like to thank Dr. Parmenter for pointing out the relevant passage in his paper.

[1]R. H. Parmenter, Phys. Rev. 116, 1390 (1959); see particularly p. 1397.

MEASUREMENT OF THE ENERGY LOSS OF GERMANIUM ATOMS TO ELECTRONS IN GERMANIUM AT ENERGIES BELOW 100 keV. C. Chasman, K. W. Jones, and R. A. Ristinen [Phys. Rev. Letters 15, 245 (1965)].

The equation on p. 247 for the atomic screening radius given as $a = 0.8853 a_0 Z_1^{2/3} = 1.47\times 10^{-9}$ cm should be $a = 0.8853_0 Z_1^{-1/3}\times 2^{-1/2} = 1.47\times 10^{-9} \times 2^{-1/2}$ cm. As a result, the values of ϵ and $\bar{\eta}(\epsilon)$ given in Table I should be multiplied by $2^{-1/2}$. Agreement between the theoretical curve shown in Fig. 2 and the experimental points is improved by the corrections, and the conclusions are unchanged.

We also note that somewhat similar experiments have been recently reported.[1,2] The values for $\eta^{-}(E)/E_R$ in our work are about 25% higher than those of Sattler and Palms for germanium.

We are indebted to Dr. J. Lindhard and Dr. Dr. P. V. Thomsen for pointing out the error in the calculations.

[1]A. R. Sattler, Phys. Rev. 138, A1815 (1965).
[2]A. R. Sattler and J. M. Palms, Bull. Am. Phys. Soc. 10, 719 (1965).

GENERAL CRITERION FOR ELECTROSTATIC PLASMA INSTABILITIES WITH UNIFORM MAGNETIC FIELD. J. E. McCune [Phys. Rev. Letters 15, 398 (1965)].

Dr. J. M. Green has raised the question of the dependence of Eqs. (7) and (8) on $|\vec{k}| \equiv k$. Penrose's treatment of the instability of plasmas without magnetic field depends on the fact that $F'(u, \vec{k}/k)$ is independent of k for a given direction of propagation. If we are to use Penrose's technique in our Eq. (7), we must clarify this point.

We see, in fact [Eq. (8)], that for a given polar angle θ of propagation with respect to $\vec{B}$ ($k_z = k\cos\theta$, $k_\perp = k\sin\theta$),

$$P(u) = P(u\,|\,\theta, w_{cj}); \tag{1'}$$

i.e., for given θ and for fixed w_{ce} (or $|\vec{B}|/k$), $P(u)$ is independent of k. Thus, we may apply Penrose's analysis to Eq. (7) for each θ and each w_{ce}, obtaining a new Nyquist diagram for each choice of these parameters. Up to this point this is formally analogous to Penrose's fixing the two parameters in $\vec{k}/k \equiv \vec{e}$ in $F'(u, \vec{e})$. However, we unfortunately failed to make clear in the original Letter the obvious connection now required between $|\vec{B}|$, k, and w_{ce} for each w_{ce} leading to an "unstable" $P(u\,|\,\theta, w_{cj})$. This