[2]G. R. Burbridge and A. H. de Borde, Phys. Rev. 89, 189 (1953); A. H. de Borde, Proc. Phys. Soc. (London) A67, 57 (1954).

[3]T. B. Day and P. Morrison, Phys. Rev. 107, 912 (1957).

[4]J. Bernstein and Ta You Wu, Phys. Rev. Letters 2, 404 (1959).

[5]L. Foldy and E. Eriksen, Phys. Rev. 95, 1048 (1954).

[6]R. Hofstadter, Annual Review of Nuclear Science (Annual Reviews, Inc., Palo Alto, 1957), p. 231.

ERRATA

THEORY OF SOLID He^3. Newton Bernardes and Henry Primakoff [Phys. Rev. Letters 2, 290 (1958)].

This Letter presented a theory of the properties of solid He^3 on the basis of a Heitler-London model of a solid. Our calculations indicated that (1) solid He^3 should behave as a nuclear antiferromagnet with a paramagnetic Curie temperature $T_C \cong 0.3°K$ at $p \cong 30$ atmos, and (2) the melting curve of He^3 should have a minimum near 0.35°K and a maximum below 0.1°K.

Our calculations have been revised and a numerical mistake was discovered. As a consequence we now find a value $T_C \cong 0.1°K$ for the Curie temperature at $p \cong 30$ atmos which is in better agreement with the experimental results of Fairbank and Walters.[1] In order to obtain a revised melting curve in a self-consistent way we recalculated the entropy of the solid using the value $T_C = 0.1°K$. The change in volume, $V_{liq} - V_{sol}$, was again taken equal to 1 cm^3/mole and independent of temperature. The entropy of the liquid was obtained by extrapolating the experimental values of Brewer and Daunt[2] to appropriate pressures. In a first approximation we used values of the entropy of the liquid extrapolated to 30 atmos, and a melting curve was obtained in first approximation by using the equation of Clapeyron, and taking $p = 29.3$ atmos as the melting pressure at $T = 0.37°K$ (the temperature where our theoretical curve for the entropy of the solid crosses the extrapolated experimental curve[2] for the entropy of the liquid). A second approximation for the melting curve was obtained by using, in the Clapeyron equation, extrapolated values of the entropy of the liquid corresponding to the melting pressure as given by our results in first approximation; on the other hand, we neglected the variation of the entropy of the solid with varying melting pressure. The resulting melting curve was found to lie lower than the one obtained in first approximation, and much lower than the melting curve obtained on basis of the assumption made by Pomeranchuk,[3] i.e., that spin alignment in the solid only occurs below 10^{-7} °K.

Our results for the melting curve are shown in Fig. 1 together with smoothed experimental values of Baum, Brewer, Daunt, and Edwards[4] who, avoiding the usual blocked capillary method, succeeded for the first time in observing the melting curve of He^3 below the temperature of the minimum.

Experiments at lower temperatures would be of great interest since a further distinction be-

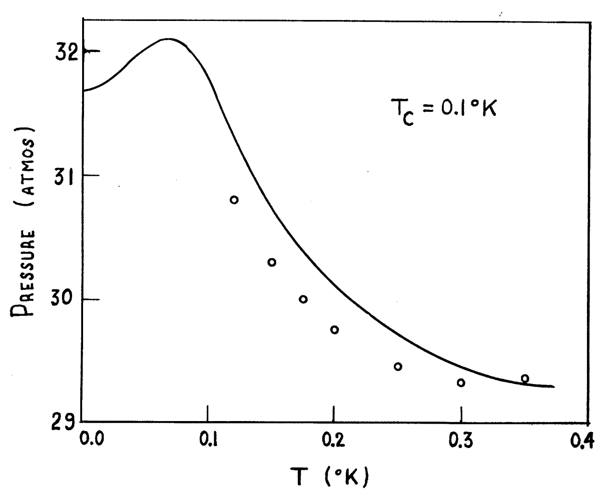

FIG. 1. Melting curve of He^3: solid line calculated as described in the text; the circles correspond to experimental points.[4]

tween our theory and Pomeranchuk's[3] may be obtained by the observation or otherwise of the maximum in the melting curve at $T \cong 0.075°K$.

[1]W. M. Fairbank and G. K. Walters, Suppl. Nuovo cimento 9, 297 (1958).

[2]D. F. Brewer and J. G. Daunt, Phys. Rev. (to be published).

[3]I. Pomeranchuk, J. Exptl. Theoret. Phys. U.S.S.R. 20, 919 (1950).

[4]Baum, Brewer, Daunt, and Edwards, this issue [Phys. Rev. Letters 3, 127 (1959)]; we are indebted to these authors for making their results available to us before publication.

MESON-THEORETICAL ORIGIN OF THE SPIN-ORBIT COUPLING BETWEEN TWO NUCLEONS

N. Tzoar, R. Raphael, and A. Klein
[Phys. Rev. Letters 2, 433 (1959)]

Equation (2) is incorrect. The correct result is

$$V_{LS} = -\mu\left(\frac{\mu}{M}\right)\left(\frac{f^2}{4\pi}\right)^2\left\{(3+2\vec{\tau}_1\cdot\vec{\tau}_2)(2+4x+4x^2+2x^3)\left(\frac{e^{-2x}}{x^6}\right) - (3-2\vec{\tau}_1\cdot\vec{\tau}_2)\left(\frac{2}{\pi}\right)\left(\frac{1}{x^4}\right)\left[xK_0(x)+2K_1(x)\right]^2\right.$$
$$+\zeta_2(\vec{\tau}_1\cdot\vec{\tau}_2)8(1+x)^2\left(\frac{e^{-2x}}{x^6}\right)+\left(\frac{\mu}{M}\right)\left[2\zeta_2\zeta_4(\vec{\tau}_1\cdot\vec{\tau}_2)-3\zeta_3\right]\left(\frac{2}{\pi}\right)\left[K_1(2x)\left(\frac{5}{2x^6}+\frac{1}{x^4}\right)+K_0(2x)\frac{5}{2x^5}\right]$$
$$\left.+\left(\frac{\mu}{M}\right)\zeta_4(\vec{\tau}_1\cdot\vec{\tau}_2)\left(\frac{8}{\pi}\right)\left[K_1(2x)\left(\frac{25}{2x^6}+\frac{8}{x^4}\right)+K_0(2x)\left(\frac{25}{2x^5}+\frac{2}{x^3}\right)\right]\right\}.$$

This does not modify qualitatively the results shown in Fig. 1, but the spin-orbit potential in triplet even states is now more strongly repulsive. We are indebted to Professor M. Sugawara for convincing us of the existence of calculational errors.

TABLE OF CONTENTS FOR VOLUME 2, No. 12; and AUTHOR INDEX TO VOLUME 2 [Phys. Rev. Letters 2, 525 (1959)].

The following entry was inadvertently omitted from the Table of Contents for Volume 2, No. 12:

The page number of this Letter was also omitted from the Author Index to Volume 2, and should be inserted (third item in the right-hand column of p. 532).

PROTONS IN THE EARTH'S MAGNETIC FIELD. Stanley C. Freden and R. Stephen White [Phys. Rev. Letters 3, 9 (1959)].

On page 10, first column, fourth last line, "distribution proportional to $T^{-1.3}$..." should read "distribution (in protons/cm^2 sec) proportional to $T^{-1.0}$...".

VAN ALLEN BELT PROTONS FROM COSMIC-RAY NEUTRON LEAKAGE. Wilmot N. Hess [Phys. Rev. Letters 3, 11 (1959)].

In the equation for dE/dx in the third paragraph (page 11, column 2, fifth last line) there was an unfortunate error of a factor of 10. The equation should read

$$dE/dx = 0.116E^{-0.586} \text{ Mev/cm of NTP air.}$$

As a result, the expression for the proton lifetime (page 12, middle of column 2) becomes

$$\tau = 2.1\times10^{-9}MT^{1.24} \text{ sec},$$

which gives $\tau = 6\times10^9$ sec for the 100-Mev proton considered in the second last paragraph. This makes the proton flux (page 12, column 2, fifth last line) $F = 1\times10^5$ protons/cm^2 sec. These changes do not affect the conclusions of the article. The equilibrium proton spectrum, $N(E)$, given in the article is a particle density, not a flux.