small meteoroids may be increased by a large factor (up to 10^2) and the time for the formation of the observed helium contents in small meteorites decreased correspondingly.

There are other observations, in addition to those of Fig. 1, that will give us valuable evidence for or against the proposed process: (1) determination of the ratios He^3:He^4 for the helium from meteorites, (2) determination of any radial variation in the helium content of meteorites, (3) measurement of the helium, uranium, and thorium contents of both the iron and stone portions of stony-iron meteorites, (4) investigation to detect any cosmic-ray radioelements (such as C^{14}).

I wish to express my sincere appreciation to Drs. S. C. Brown and B. Rossi of M.I.T., and to Drs. E. M. Purcell and F. L. Whipple of Harvard for valuable discussions and suggestions.

[1] F. Paneth, Nature **149**, 235 (1942).
[2] The masses are from: H. H. Nininger, *Our Stone-Pelted Planet*, Appendix; A. D. Nininger, Pop. Astron. **45**, 449 (1937); **47**, 209 (1939); **48**, 555 (1940), and F. C. Leonard, Pop. Astron. **51**, 161 (1943). For the two crater-producing meteorites a somewhat low estimate of the mass has been adopted.
[3] W. E. Hazen, Phys. Rev. **65**, 67 (1944); M. M. Shapiro, Rev. Mod. Phys. **13**, 58 (1941); H. Wambacher, Sitzungsberichte Akad. Wiss. Wien **149**, 2a (Nos. 3–4), 157 (1940); **149**, 2a (Nos. 5–6), 231 (1940).
[4] H. Bridge and B. Rossi, Phys. Rev. **71**, 379 (1947).
[5] For $E=3$ Bev the equation $N=(7\times10^{-10}/E^{1.9})/\text{cm}^3$ leads to $J=2.6/\text{cm}^2\text{-sec}$.

Erratum: On the Alleged Gamma Ray of N^{13}

[Phys. Rev. **71**, 906 (1947)]

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The Editor regrets that Fig. 1 of the above Letter to the Editor was badly distorted in reproduction. Its correct appearance is as follows:

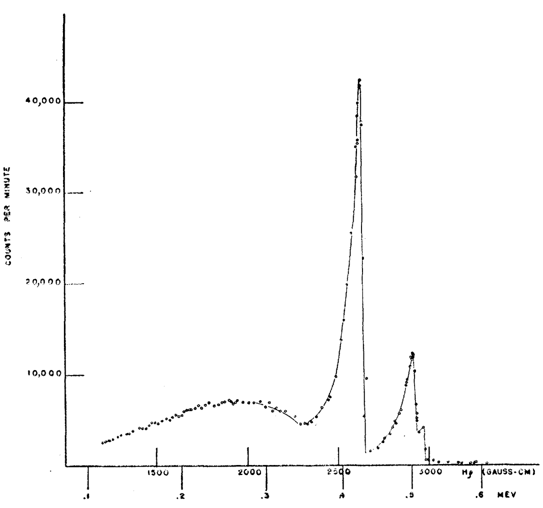

Fig. 1. Momentum distribution of photo and Compton electrons ejected from a Pb radiator by the radiation from N^{13}.

On the High Energy Neutron-Proton Scattering

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In a previous paper,[1] we calculated the cross section for the inelastic scattering of neutrons by protons with production of isobars, according to the point of view of the meson field theory of nuclear forces with strong coupling. The cross section depends on the isobar energy E_j of a nucleon; the value that we assumed for E_j was 45 Mev, as indicated by Wentzel's[2] attempt to adjust the theory to Amaldi's measurements of the angular distribution of 14 Mev neutrons scattered by protons. Recently, however, Villars[3] showed that if the theory with strong coupling is to give the correct energy levels of the triplet and singlet states of the deuteron, then E_j should be larger[4] than 200 Mev. In this case, the production of isobars is possible only if the kinetic energy E_0 of the bombarding neutrons is larger than 400 Mev in the laboratory system. In Table I

Table I. Cross sections of the inelastic and elastic $n-p$ scattering at high energies.

E_j	E_0	$\sigma_{\text{in}}(\text{cm}^2)$	$\sigma_{\text{el}}(\text{cm}^2)$	R
100 Mev	250 Mev	$1.05\cdot10^{-27}$	$1.44\cdot10^{-25}$	0.007
150	350	$0.40\cdot10^{-27}$	$1.03\cdot10^{-25}$	0.004
200	450	$0.24\cdot10^{-27}$	$0.80\cdot10^{-25}$	0.003
250	550	$0.84\cdot10^{-28}$	$0.66\cdot10^{-25}$	0.001
300	650	$0.50\cdot10^{-28}$	$0.55\cdot10^{-25}$	0.0009
350	750	$0.33\cdot10^{-28}$	$0.48\cdot10^{-25}$	0.0007
400	850	$0.15\cdot10^{-28}$	$0.42\cdot10^{-25}$	0.0003

we give the values of the inelastic cross section σ_{in} on the symmetrical Møller-Rosenfeld theory with strong coupling,[5] corresponding to several high values of the isobar energy. For comparison we also give the values of the elastic cross section σ_{el} as derived from the same theory with weak coupling, i.e., from the potential:

$$V=(\boldsymbol{\tau}_I\cdot\boldsymbol{\tau}_{II})\{g_1^2+g_2^2(\boldsymbol{\sigma}_I\cdot\boldsymbol{\sigma}_{II})\}e^{-\mu r}/r,$$

where the symbols have the usual meaning and $g_1^2=0.05$, $g_2^2=0.09$. Both cross sections were evaluated in the first Born approximation; R is the ratio $\sigma_{\text{in}}/\sigma_{\text{el}}$.

It is seen that σ_{in} decreases more rapidly than σ_{el} with increasing energy; the ratio R is already very small for $E_0=250$ Mev. Our results show that such high values of the isobar energy make it still more difficult to check the strong coupling theory directly, at least with a nucleon-nucleon collision experiment. In the same paper,[1] it was stated that the triplet cross section of the elastic scattering of neutrons by protons as calculated by Hulthén[6] in the pseudoscalar theory was not correct. Hulthén's formula is, however, correct[4] and agrees with ours except for a factor 3 by which our formula has to be divided if we use the usual expression:

$$\sigma=\tfrac{1}{4}\sigma_s+\tfrac{3}{4}\sigma_{\text{tr}}.$$

The elastic cross section in this theory is $0.18\cdot10^{-24}$ cm^2 for 100 Mev neutrons; also $R=0.16$ and not 0.05, for $E_j=45$ Mev, as was indicated in our paper.