interval of time within statistical differences. If photo-emission from cathodes due to scattered photons was appreciable, the number of coincidences with the aluminium counter should have been much larger. This was actually found to be the case when readings were taken with the cap of the small nickel counter removed; the percentage of coincidences with the aluminium counter was more than double and their number was more than 100 in 10 min.

The electrodes used in these experiments were all supplied by Messrs. Johnson Matthey and Co., Ltd., London. A typical set of results, which are reproducible, is given in Table 1.

We have checked that these coincidences are not due to the emission of photo electrons from the ends of the channel.

The details of these experiments will be given elsewhere.

We are grateful to H.M. Government for the generous gift under the Colombo Plan of electronic equipment and radioactive materials to our Nuclear Research and High Tension Laboratory, which has helped us in carrying out these experiments. We also thank Sir James Chadwick for his encouragement and interest in this work.

Rafi M. Chaudhri
Mustafa Yar Khan
Abida Khawaja
Rehana Dar

Physics Department,
Government College,
Lahore, West Pakistan.

[1] Korff, S. A., and Present, R. D., *Phys. Rev.*, **65**, 274 (1944).
[2] Huster, E., and Ziegler, E., *Z. Phys.*, **146**, 281 (1956); **149**, 583 (1957). Chaudhri, R. M., Khan, M. Y., and Yunas, M., *Nature*, **179**, 1364 (1957).

Barometric Pressure and Altitude

Observations made by Pugh on Mount Everest in 1953 showed that the relationship between barometric pressure and altitude corresponded more closely with that of Zuntz, Loewy, Müller and Caspari[1] than with the internationally adopted altimeter calibration formula used in decompression chamber studies. In a review of the literature[2] he showed that observations made on other expeditions confirmed his findings.

In the summer of 1956, at the suggestion of Dr. Pugh, I made a series of barometric observations in the Karakoram Mountains of Northern Kashmir. An aircraft aneroid similar to that described by Pugh was used. This was calibrated before and after the expedition, and it was also shown to be insensitive to the temperature changes encountered in the Karakoram. Altitudes were derived from a survey[3] made during Shipton's expedition of 1939.

The results are shown in Fig. 1. They provide further evidence that a decompression chamber experiment, interpreted in terms of equivalent altitude on a mountain, would be misleading. The pressure conditions in such an experiment would be encountered at a considerably greater altitude than that derived from the generally adopted formula.

These observations formed a small part of the scientific work of the London School of Economics Mountaineering Club Himalaya Expedition 1956, and I gratefully acknowledge the collaboration of the members of the expedition and the financial support received from the Mount Everest Foundation, the Medical Research Council, and from the Central

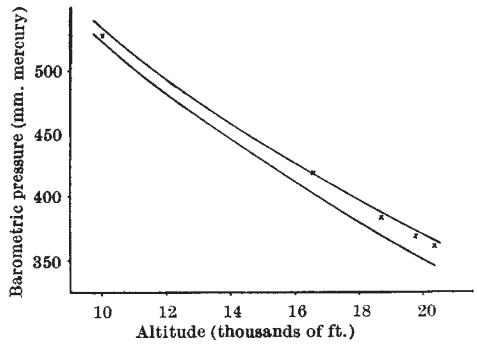

Fig. 1. The upper curve is plotted from the formula of Zuntz *et al.*[1] using a mean air temperature of 15° C. The lower curve is obtained from the internationally adopted altimeter calibration formula. The crosses represent observations made in the Karakoram Mountains in 1956

Research Fund of the University of London. The calibrations of the altimeter and the check on its temperature sensitivity were carried out by Mr. F. P. Ashworth of the Fairy Aviation Co., Ltd.

E. S. Williams

The Middlesex Hospital,
London, W.1. April 7.

[1] Zuntz, N., Loewy, A., Müller, F., and Caspari, W., "Höhenklima und Bergwanderungen", 38 (Deutsches Verlagshaus, Berlin, 1906).
[2] Pugh, L. G. C. E., *J. Physiol.*, **135**, 590 (1957).
[3] Mott, P. G., *Geog. J.*, **116**, 89 (1950).

Fine Aluminium Nitride Precipitates in Steel

For the past thirty years, aluminium has been commonly used in controlling the deoxidation, and thus the properties, of a number of steels. As a result of this practice there are important consequences if an appreciable amount of nitrogen is present. Aluminium in steel is known to be able to form one of the most stable nitrides. It is generally believed that under certain conditions aluminium nitride appears as inclusions after the solidification of the steel. Many investigators[1-5] have reported findings relative to aluminium nitride. Chemical and X-ray analyses of the residue have confirmed the presence of aluminium nitride in steel. Despite these claims, however, exact knowledge concerning the occurrence of aluminium nitride with respect to the structure of steel is not yet available. This communication reports the result of an attempt at identifying and separating fine aluminium nitride particles from a sample of nitrided vacuum-melted steel with the use of the electron microscope.

The sample prepared for this investigation was a small piece of steel having the following chemical analysis (per cent):

Carbon	0·084	Aluminium	0·035
Manganese	0·27	Nickel	0·019
Phosphorus	0·008	Chromium	0·055
Sulphur	0·008	Vanadium	0·003
Silicon	0·009	Molybdenum	0·009

The sample was decarburized, nitrided and then homogenized at 1,250° F. *in vacuo*. The standard mechanical polishing and 'Nital' etching method was employed for preparing the sample surface. The concentration of 'Nital' used was 1 per cent and the total etching time was about 15 sec. The freshly prepared sample was etched and inserted quickly into the diffraction column of an *RCA* type *EMU* electron microscope to minimize surface contamination by air. The operating potential of the