delle Ricerche, which has supplied the funds necessary to carry out a group of researches on the penetrating radiation.

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Arcetri, Firenze,
March 5.

[1] Tuwim, *Sitz. Preuss. Akad.*, p. 91; 1931. Skobeltzyn, *C.R.*, **194**, 110; 1932.
[2] Medicus, *Z. Phys.*, **74**, 350; 1932.
[3] NATURE, **125**, 636; 1930.

Geophysical Prospecting

MAY I, as one of the editors of "The Principles and Practice of Geophysical Prospecting" (Cambridge University Press, 1931), ask NATURE to publish the following correction? It is made at the request of Mr. E. H. Booth, one of the contributors to the chapter on seismic methods, and it has the approval of Sir Edgeworth David.

An error has crept into the discussion of field tests at Tallong, N. S. Wales, given on p. 229. In Fig. 176 the east and west indicators have been accidentally interchanged. The same figure indicating the interpretation placed on the geophysical work shows the existence of a mass of alluvium over a mile wide and upwards of 200 feet deep. In the geological map of the Tallong area, reproduced on p. 228, no such deposit of anything approaching to this extent and thickness is shown, though the omission of a geologist to indicate such a mass of material would be very serious. As a matter of fact, the deposit is mostly decomposed granite in situ. The mistake in representing this as alluvium is obviously due to the fact that decomposed granite transmits seismic waves comparatively slowly, as would alluvium, namely, at the rate of about 3000 feet per second. Actually there is outcropping granite over this portion of the area, as shown in the geological map. The use of the term 'alluvial velocities' as a general expression for the velocity of a wave through incoherent material is apt to be misleading, and might be discontinued.

In fairness to the geologists who surveyed this area years ago, it must be admitted that the geophysical interpretation, while accurately classifying the material according to the velocities of the transmitted waves, was inaccurate in its presentation of the geological structures of the Tallong area. It is regretted that through an oversight no reference was made to the fact that the geological map of Tallong, reproduced in Fig. 175, is almost entirely the work of Dr. W. G. Woolnough, geological adviser to the Commonwealth Government of Australia. The accuracy of this map has been amply verified by later observers.

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Automatic Recording of Heaviside Layer Heights

EXPERIMENTS made to determine the effective height of the Heaviside layer have shown extremely varied results, and it has been clear that, in order to obtain any idea of the normal state of the upper atmospheric ionisation, it is unsatisfactory to take observations at widely spaced intervals of time. Continuous automatic records of effective height are required.

Gilliland and Kenrick have recently published a preliminary account of a method of obtaining such records.[1] I have independently developed a method which differs in several important respects from that of Gilliland and Kenrick. The 'echo' method of Breit and Tuve is used. A transmitter is caused to emit short 'pulse' signals with a constant interval by being driven from the A.C. mains. The signals, together with any echoes, are then arranged to give a stationary pattern on a cathode ray oscillograph screen at the receiver.[2] The tips of the peaks representing the signal and echoes are photographed on a film moving at about three inches per hour.

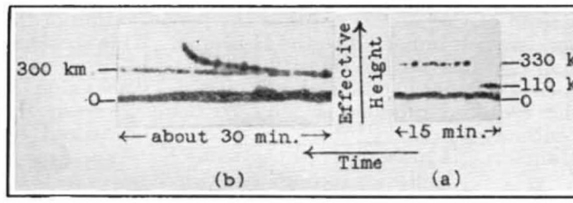

FIG. 1.—Specimen records of height of Heaviside layer.

The sample records shown in Fig. 1 have been obtained in this way, and show the following results:
(*a*) Jump from *E* layer (110 km.) to *F* layer (330 km.).
(*b*) Splitting of echo from *F* layer. The upper component apparently vanishes due to electron limitation, while the lower component persists.

It is hoped to publish further details of the method in the near future.

ERIC L. C. WHITE.

Cavendish Laboratory,
Cambridge,
March 5.

[1] Bureau of Standards *J. Research*, Nov. 1931, 783.
[2] E. L. C. White, "Method of continuous observation of the Heaviside Layer", *Proc. Camb. Phil. Soc.*, **27**, 445; 1931.

Photo-Conductivity of Diamonds

SINCE reporting that we had found a diamond transparent at 8 μ in the infra-red and so far as λ2300 in the ultra-violet region of the spectrum,[1] whereas most diamonds have an intense infra-red absorption band at 8 μ and no longer transmit beyond λ3000, we have come across four more diamonds of that type transparent in both regions. Some of these diamonds respond to radiation in a manner which is striking and, we believe, hitherto unrecorded.

Gudden and Pohl,[2] and also Miss Levi,[3] succeeded in obtaining a current when certain diamonds were illuminated with ultra-violet light from a mercury arc, provided at the same time a considerable voltage were applied to surfaces of the diamond.

This we can repeat with all the diamonds of the transparent character, but most of them on illumination without the application of any voltage produce a current. In one case this is as much as is equivalent to a galvanometer throw of 1×10^{-7} ampere, while a back E.M.F. of about 0·6 volt is required to bring the galvanometer back to zero. This effect was obtained with contacts of brass, lead, or graphite.

Exploration of the activating region by means of the large monochromator of King's College, London (kindly put at our disposal by Prof. Allmand), showed that the most effective wave-length for photo-conductivity in the transparent diamonds is about λ2300.

R. ROBERTSON.
J. J. FOX.
A. E. MARTIN.

Government Laboratory,
London, W.C.2,
March 24.

[1] Robertson and Fox, NATURE, **126**, 279; 1930.
[2] *Z. Phys.*, **3**, 125; 1920: **6**, 249; 1921: **7**, 65; 1921.
[3] *Trans. R. S. Can.*, **16**, 241; 1922.