

THE Editor of NATURE has very kindly let me see the interesting communication from MM. Colange and Le Grand and the paper to which they refer.

The phenomenon is exactly the same as that observed by me, and the paper seems to provide a most plausible explanation for it.

Besides the purely geometrical cause for the increased brightness of the beams towards the opposite horizon, contributing strongly to the illusion of an 'anti-phare', another cause might be the usual density gradient of the haze towards the sea, and therewith an increase of the amount of light scattered back to the observer per unit volume from the beam, towards the opposite horizon.

A. H. ROSENTHAL.

68 Ladbrooke Grove,  
London, W.11.

#### A Binocular Illusion

WAKING under my mosquito net one morning during a visit to India, I was surprised to find that the wall of the net before my eyes appeared to

consist, not of a single vertical sheet of netting, but of three or more sheets. On closer examination, I found that these seemed to be arranged like the successive slats of a venetian blind, and supposed this to be a binocular illusion—a variant of that mentioned by Prof. H. H. Dixon<sup>1</sup>—the  $n$ th mesh seen by one eye combining successively with the  $(n-1)$ th,  $n$ th,  $(n+1)$ th . . . mesh fixed by the other eye.

The first minute after waking from sleep, when vigilance and control are weak, is doubtless conducive to the involuntary experience of this type of illusion. For, on returning to Cambridge I asked a group of physicists if they knew of the possibility of such binocular illusions, and the only affirmative reply came from one to whom a patterned bedroom wall-paper had afforded a similar experience (complicated by the activity of a house-fly).

RONALD W. GURNEY.

Bristol.

May 9.

<sup>1</sup> NATURE, 141, 792 (April 30, 1938).

#### Points from Foregoing Letters

THE dependence of heat conductivity of quartz on the size of the crystals has been determined by Prof. W. J. de Haas at very low temperatures (2.5°, 2.9° and 3.3° K.). The heat resistance was found to approach asymptotically a constant value. The author assumes that the resistance is due to scattering of the elastic waves by the surface and by the mosaic structure, and to scattering of the elastic waves by one another.

G. T. Seaborg and D. C. Grahame find that internal conversion of the gamma rays of moderate energy, with a conversion coefficient as high as 15 per cent, occur in the heavier elements. In view of the observation by Kallmann and Kuhn that gamma rays are emitted in the D-D reaction, the authors suggest that gamma rays may be responsible for the rather large number of counts observed in a Geiger-Müller counter operated near a source of fast neutrons, and that it may be unnecessary to assume, as Kikuchi and Aoki have done, that a direct interaction between fast neutrons and electrons takes place.

Commenting on the observation reported by Bernard, identifying the yellow radiation of the night sky and the twilight with the sodium line, Prof. J. Cabannes, Prof. J. Dufay and J. Gauzit refer to findings by previous investigators who had come to the same conclusion, and describe similar work which they themselves had carried out and published simultaneously with Bernard.

Using the method of partition functions, the statistical mechanics of the adsorption of gaseous mixtures is discussed by Dr. F. J. Wilkins with due allowance for the imperfection of the adsorbed layer. Adsorption isotherms for the separate gases are derived.

X-ray examination of nickel-aluminium alloys has shown the existence of three phases, Ni<sub>3</sub>Al, Ni<sub>2</sub>Al<sub>3</sub>, and NiAl<sub>3</sub>, with distinct structures. Dr. A. Taylor and Dr. J. Weiss find that by treating with sodium hydroxide solution it is possible to remove aluminium atoms from the lattice leaving vacant sites; when only 0.5 Al remains the structure ultimately collapses and tends to form the face-centred cubic structure

of nickel. Electron transfer processes are probably considerably enhanced in certain nickel structures with different lattices which possess a very high unsaturated surface, and this may explain the activity of such substances as catalysts in hydrogenation.

Many more dissimilarities than similarities were noted in a series of experiments made by Dr. W. H. George, in which about forty unprejudiced observers spontaneously made comparisons between pairs of objects. Reference is made to the bearing of the results on classification and on social problems.

Dr. W. J. Hickinbottom and E. W. Lambert find that the two known di-butylaniline couple normally with diazosulphanilic acid without loss of a butyl group. Their findings do not agree with those upon which Karrer based his theory of coupling of aromatic tertiary amines.

About half the bound carbohydrate in horse serum pseudoglobulin can be removed, according to A. G. Ogston, by digestion with a special enzyme. The pseudoglobulin so treated shows increased flocculation time and decreased precipitability, but on the whole its properties are not greatly changed considering the considerable change in carbohydrate content.

E. E. Faerber suggests that the cancers of infants, which affect tissues such as the retina, constitute a separate category, by virtue of the peculiar chemical reactions in the tissues affected.

The upper stratum of red corpuscles seen in blood sedimentation tests is stated by J. G. Stephens to be composed of immature cells with surfaces resembling those of leucocytes. Although the upper stratum frequently contains abundant reticulocytes, other immature red cells, not recognizable by staining, are also thus revealed by their differential sedimentation.

Dr. E. Heymann and H. P. Weber use the partition method to test the stability of intermetallic compounds in the molten state (with sodium as one component). Such compounds appear to be stable up to about 200° C. above the melting point, but decompose at higher temperatures.