(5) The lower the nickel content of the alloy as a whole, the greater is the width of the kamacite plate, because more volume of kamacite will have to be formed in order to expel a sufficient number of nickel atoms to produce ténite at the boundary. This explains the different degrees of 'coarseness' found in meteorites (octahedrites).

(6) Meteorites within a certain range of composition generally contain plessite, which may consist of a microscopic octahedral arrangement of kamacite and ténite, or may be of a granular structure similar to that of the metastable distorted α alloy. When the plessite is in the latter form the meteorite has not reached its final state of equilibrium, a conclusion which may appear strange when, to quote one writer, meteorites "have presumably had geological ages in which to reach equilibrium". But according to the views expressed here, any equilibrium which might have been established would be upset by the final heating of the meteorite in passing through the atmosphere and in penetrating the earth's crust, followed by sudden cooling.

(7) If plessite may be regarded as consisting only of the metastable distorted α lattice, it should not exist in an alloy which has reached its final and true

state of equilibrium, this state consisting only of stable kamacite and ténite.

The above general statements will be amplified and supplemented by experimental data in a series of papers which will shortly be published.

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A Visual Phenomenon

ON starting an electric fan with the observer so placed that he can see the sky (or other bright background) through the vanes of the fan, then at a certain speed of rotation a hazy violet patch of colour can be seen in the plane of the fan. At higher rates of rotation the effect disappears, but can again be observed on decreasing the speed to the critical value. The speed in question appears to correspond with the frequency of flicker. The effect was actually observed in the case of a fume cupboard extractor fan.

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Points from Foregoing Letters

PROF. P. M. S. BLACKETT calculates the mean range of the mesotrons (particles of mass intermediate between that of the electron and that of the proton) from the relative intensity of the inclined cosmic rays to the vertical rays, and also from the absorption anomaly between air and water. He arrives at a value of 1.7×10^{-6} sec. for the decay time of a fast-moving mesotron, assuming its mass to be 150 times that of the electron. Prof. B. Rossi obtains a value of the same order of magnitude for the life of the mesotron from calculations based upon the anomaly of absorption of cosmic rays by air and by lead, when vertical and inclined counters were used.

A simple demonstration of Yukawa's relation $\rho = h/mc$, from which the existence of particles of intermediate mass (mesotrons) was inferred, is given by Prof. G. C. Wick, based upon Heisenberg's Uncertainty Principle.

When inferring crystal structure from X-ray vector maps possibilities are finite, according to Prof. E. H. Neville. It is rare that two or more solutions are possible, especially in the case of a megamolecule. If one structure is shown to fit the facts exhibited in the vector diagrams, any serious criticism must begin by providing an alternative structure that fits the diagram.

A fundamental electrical formula which expresses the forces acting on elementary electric charges at rest and in uniform or accelerated motion, without introducing magnetic quantities (thus dispensing with the duality of electricity and magnetism), has been worked out by Dr. C. V. Drysdale.

The fact that genuine proteins are split by proteinases (such as trypsin) does not prove that they contain peptide bonds, according to Dr. K. Linderstrøm-Lang, R. D. Hotchkiss and G. Johansen. A small but distinct rise in the temperature coefficient

of the initial hydrolysis rate with increasing trypsin concentration and a pronounced fall in the coefficient when the protein has been first heated to 100° C. and then cooled, indicate that peptide bonds appear upon denaturation, but may not have existed in the original protein.

The preparation of certain monomeric compounds of silicon of a new type, containing both silyl and alkyl radicals, is announced by Dr. H. J. Emeléus and N. Miller. A quaternary salt, trimethylsilylammonium chloride, containing such radicals, is also described; and its behaviour is compared with that of its analogues.

Prof. A. Schönberg describes a method by means of which the group $-\text{CO}-\text{CO}-\text{CO}-$ or $-\text{CO}-\text{CH}_2-\text{CO}-$ may be converted into the dicarbonyl group $-\text{CO}-\text{CO}-$, which is virtually the degradation of a propane derivative into an ethane derivative.

H. A. C. McKay points out that in the case of isotopic exchange reactions, where the isotopes have identical chemical properties, it would not be possible, even in principle, to determine the order of the reaction from a single concentration-time curve.

The effect of male and female sex hormones upon various organs (liver, heart, adrenals) of castrated or ovariectomized rats, is described by Dr. V. Korenchevsky and K. Hall. They show that the hormones produce manifold important results upon the non-sexual organs and that the male and female hormones have sometimes co-operative, and in other circumstances antagonistic, effects.

Prof. A. P. Coleman doubts Prof. MacBride's hypothesis of a Gondwana continent having drifted across the South Pole in Permo-Carboniferous times, and supplies alternative explanations for the glaciation effects observed in some of the Permo-Carboniferous rocks of the southern hemisphere.