

of thanks and such superfluous matter or padding should be excised.

On the form of a paper, we feel that the introduction is often unnecessarily lengthy, except in the 'key paper' advocated by us, and ruthless editing could reduce its length in subsequent papers without sacrifice of intelligibility. We agree that the incomplete paper could be checked, and our regret is that it does get printed owing to inefficient editing.

We are wholly on the side of Mr. Foxon on the subject of genuine research and the problem of the young worker who is merely adding professional qualification. We feel that should publications adopt our recommendations genuine research would flourish, and the problem of the 'kilograms' of contributed papers be solved, by the printing of good quality material with consequent economy of time, cost and bulk.

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¹NATURE, 135, 664, April 27, 1935.

Prediction of Earthquakes

As Mr. Broughton Edge reminds us¹, an earthquake is preceded by the building up of stress conditions. The most direct way of determining stress is by the observation of strain, and the amounts of strain which have been observed prior to an earthquake have been very large.

The methods of interferometry would permit observation of such strain locally at small expense, and the surface stress throughout a large area might therefore be very readily mapped out and a continuous record made. Such observations could scarcely fail eventually to result in foreknowledge of these disastrous occurrences.

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¹ NATURE, 135, 997, June 15, 1935.

Points from Foregoing Letters

FURTHER steps towards the elucidation of the chemical structure of vitamin D (calciferol) are reported by Prof. I. M. Heilbron, K. M. Samant and F. S. Spring. They suggest a three-ring formula and indicate the probable position of the double bonds and of the hydroxyl group.

Prof. G. F. Marrian and S. L. Cohen report that their colorimetric method for the estimation of the sex hormone, oestrin, in human pregnancy urine, is not applicable to the detection of that substance in the urine of non-pregnant women, where it exists in much smaller amounts.

Experiments with a cosmic ray detecting apparatus sending its own radio signals as it ascends into the stratosphere are reported by S. Vernoff. The apparatus is likely to be useful in thinly-populated localities where the subsequent finding of self-recording apparatus sent up by unmanned balloons would present considerable difficulties.

The Vegard bands in the afterglow or phosphorescence of nitrogen are, according to Prof. L. Vegard, due to a recombination of nitrogen atoms, derived from molecules dissociated by the bombarding rays. This view links phosphorescence phenomena with chemi-luminescence.

Dr. T. E. Sterne suggests that if the apparently inconsistent problem in inverse probability, recently proposed by Dr. Dingle, is regarded as a problem in association, it is seen to be really self-consistent, and that the method of association reveals the nature of the fallacy involved in the use of inverse probability when the prior probabilities are unknown. Dr. Dingle, while admitting that such a combination, giving a unique result, is possible, claims that it has nothing to do with probability.

Mr. R. Maxwell Savage records that the toad, *Bombina variegata variegata*, has laid eggs in captivity at the age of three years. Males showed vigorous sexual behaviour at two years old, and signs of typical sexual reactions were seen in animals only one year old.

While agreeing with Sir Arthur Smith Woodward's warning that similar fossil animals may have developed independently in widely separated areas and are,

therefore, no definite proof of Wegener's continental drift theory, Prof. A. E. Trueman points out that identity of succession of similar forms in comparable sequence in the Upper Carboniferous rocks of western Europe and eastern America does provide strong support for the theory.

An active principle responsible for the coagulation of the blood is described by Dr. Albert Fischer. The active substance is apparently formed during the clotting process of the blood plasma and disappears almost instantaneously at the very moment of coagulation; it can, however, be transferred indefinitely into new plasma without decrease in its activity.

An improved type of cylindrical quartz oscillator (used in television), with a temperature coefficient of frequency a hundred times less than the usual coefficient for longitudinal vibrations of quartz, is described by L. Essen.

Prof. E. W. Zehnowitzer finds that crystals of sylvine (KCl), like those of common salt, lose their brittleness after treatment with water. Such crystals recently prepared from a molten state similarly possess considerable plasticity, which may explain the frequent occurrence of bent and twisted crystals.

A new, rapid and economical electrolytic method of preparing polished copper surfaces for metallurgical examination is illustrated by P. A. Jaquet. The copper is made the anode in an aqueous solution of orthophosphoric acid, and a high current density is used.

Hugh O'Neill discusses the twinning of crystals of alpha iron, which is soft and magnetic and the chief constituent of wrought iron, as evidence of previous history (cold-working and annealing) of the metal; he recalls his former suggestion that twinning in alpha iron might sometimes be associated with twinned gamma iron (non-magnetic) from which it had cooled.

The heat of sublimation of carbon, a constant used in calculating the energy of formation of carbon compounds, has a value of 167 k.cal. according to calculations by P. Goldfinger and W. Lasareff. They deduce its value from the energy of dissociation of carbon monoxide into normal atoms, as determined by thermochemical and spectroscopical methods.