

Electrified Motor-Vehicles

WHILE to experience an electric shock from a motor-vehicle appears from a recent note to be unusual in England¹, it is so common in the United States as to call for no comment. An interesting consequence of this phenomenon is to be seen on the San Francisco-Oakland and Golden Gate Bridges, where thousands of cars a day pass the toll gates and where the continuous small shocks suffered by receivers of toll on touching coins handed to them by drivers of cars have proved very unpleasant. Wire brushes standing about one foot high have accordingly been installed immediately before all toll gates so that cars as they approach are relieved of their accumulated charges. In at least one toll station in this country a jet of water is sprayed on the wheels of approaching cars for the same purpose.

In many States and municipalities there is a law

compelling vehicles carrying petrol and similar inflammable products to drag chain behind them in order to discharge continuously any electrostatic charge of the vehicle. On a dark night I have seen a continuous glow coming from such chains dragging over asphalt roads, quite different in appearance from sparks which might be produced by striking stones. In the State of Massachusetts, however, I understand there is a law prohibiting drag chains on the grounds that the frictional or electrical sparks so generated might ignite a leaky truck.

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¹ NATURE, 142, 713 (1938).

Points from Foregoing Letters

FOLLOWING upon Hahn and Strassmann's observation that isotopes of barium are probably formed when uranium is bombarded with neutrons, Prof. Lise Meitner and Dr. O. R. Frisch discuss a new type of nuclear reaction in which a heavy atomic nucleus after taking up a neutron splits into two roughly equal nuclei, very much as a drop of water breaks into two when its size is large and its surface tension is low. In the case of uranium, if one of the new atoms formed is barium the other will be krypton. Thorium apparently breaks up into barium and lanthanum isotopes.

A new thermostatic arrangement for keeping apparatus at constant temperature within 0.002° C. without the necessity of careful insulation or surrounding with a circulating liquid, is described by Prof. T. H. Laby and V. D. Hopper.

Sir Joseph Larmor points out that the tensor scheme of relativity cannot by itself deal with the relation of an asymmetrical object to its mirror image. To be effective for this purpose, the mobile measuring rod of Einstein would have to possess a screw structure essential to it.

By applying a suitable canonical transformation to a system consisting of nuclear particles and a meson field, and by assuming an interaction between the meson field and electrons and neutrinos, Dr. C. Møller and Prof. L. Rosenfeld arrive at a transformed Hamiltonian containing a term which gives the probabilities of beta-disintegration processes. The introduction of a pseudoscalar wave function, in addition to the four-vector one, offers the possibility of a better adaptation to the experimental results.

Dr. Harold Jeffreys, in reply to Dr. W. Edwards Deming, maintains that the notion of reasonable degree of belief is implicit in every application of the theory of probability, and that the frequency definition, though designed to avoid this notion, in fact fails to do so in actual application.

Commenting on Prof. Coleman's contention that the late Palaeozoic glacials of the southern hemisphere would have necessitated the presence of relatively warm seas in the neighbourhood, Dr. A. L. du Toit states that conditions of oceanic and atmospheric circulation and solar radiation are more important for the formation of an extensive ice-cap than nearness to warm water, and that the hypothesis of a

south polar drift of the Permo-Carboniferous Gondwanaland is not invalidated.

Prof. E. V. Appleton and R. Naismith describe the reception of a medium-delay radio echo at Tromsø during the International Polar Year 1932-33, under ionospheric conditions such that it was possible to interpret the results as due to lateral scattering from a complex ionized centre at a considerable distance, and not to reflection at a very great height above the ground.

Dr. J. A. Chalmers and E. W. R. Little report a measurement of an average precipitation current for a period of ten minutes of more than -7.3×10^{-12} amp./cm.², during a shower of soft hail. This exceeds the vertical fine-weather current for a whole year.

Prof. L. Farkas and A. Farkas find a fairly rapid rate of exchange between the hydrogen atoms in the molecule of hexane (or cyclohexane) and deuterium, when a gaseous mixture of the two is brought in contact with platinized platinum foil.

In experiments on the growth of young rats fed on two varieties of rice, adjusted to the same protein content, but differing widely in regard to their phosphorus contents, Dr. A. Sreenivasan finds that the growth rate is greater with the variety of rice containing the larger percentage of phosphorus.

A variety of *Enothera missouriensis* grown at the Courtauld Laboratory, Regent's Park, London, has been found to be sterile when self-pollinated. The plant has seven free pairs of chromosomes, and Prof. R. R. Gates suggests that it has developed a mechanism of self-sterility in order to maintain a heterozygous condition.

By immersing seeds of chilli (*Capsicum annum*) in solutions of colchicine of various concentrations, Drs. B. P. Pal and Dr. S. Ramanujam have obtained plants with increased number of chromosomes (tetraploids and one triploid) showing abnormality of growth (thicker leaves, fasciation of stem, doubling of flowers).

Dr. Lucius Nicholls records the mating of a pair of lorises in captivity. They had been caught in the hills of Ceylon at a height of between 5,000 ft. and 6,000 ft. They made a curious mewing sound whilst mating. A living young one was born 174 days after mating had taken place.