discontinuities in the curves. The resulting drop becomes a sphere within a short time.

(3) For 20 per cent of the drops t_g and $t_{f\text{-}g}$ increase for the first five minutes at the same percentage rate. These drops are found to be oblate spheroids with eccentricity gradually decreasing with time, and becoming spheres.

(4) For 30 per cent of the drops, as shown in Fig. 1, while the time variation curve of t_g is very regular, that of the greatest common divisor v_1 shows discontinuities which depend upon the number of charges on the drop, and the greater the number the smaller the common divisor. This class of drop is stable for hours. They are presumably prolate spheroids.

YOSHIO ISHIDA.

Institute of Physical
and Chemical Research,
Tokyo.
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Points from Foregoing Letters

THE heat conductivity of liquid helium II at 1·34° and 2·06° K. has been measured by Dr. J. F. Allen, Dr. R. Peierls and M. Zaki Uddin, by means of a new method consisting essentially of a combination of a vapour-pressure thermometer with a liquid-helium manometer. The results show that the heat conductivity of liquid helium II depends upon the temperature gradient, an unusual behaviour for which, the authors state, they can offer no explanation.

A convenient method of analysing ternary gas mixtures, containing hydrogen as one component, by means of thermal conductivity measurements, is described by J. L. Bolland and Dr. H. W. Melville. The volume of gas required may be reduced to 0·01 c.c. at N.T.P., by using a suitable micro-conductivity cell.

Photographs showing slip-formation in crystals of salt the surfaces of which have been scratched and then stretched, are submitted by A. W. Stepanow. The photographs, taken in polarized light, show that the surface scratches give rise to slips; these in turn increase the surface defect, which ends in fracture.

From the effect of iodoacetate, phloridzin and arsenate upon the lactic acid formation in muscle extract, Dr. Dorothy M. Needham and R. K. Pillai deduce that the oxidation-reduction of triosephosphate with pyruvic acid is coupled with a synthesis of adenylpyrophosphate from adenylic acid and free phosphate. They suggest that this coupled esterification of phosphate may play an important part during the anærobic recovery period in the muscle, when there is little heat output. The energy developed by the first reaction, they consider, may be taken up by the second.

A substance with absorption band at 639 mμ, which Dr. R. Lemberg, B. Cortis-Jones and M. Norrie recently deemed to be a hydrogen-peroxide compound of proto-hæmochromogen, appears, according to further tests by the same authors, to be the ferric hæmochromogen of an oxyporphyrin carrying a hydroxyl group on the α-methene group.

A graph showing the amount of hydrochloric acid taken up by powdered glass after given periods of time, and another giving the change in electric potential of a new glass electrode with time, are submitted by G. Haugaard. From these, the author infers that the suitability of a glass as an electrode depends upon its ability to exchange sodium and calcium ions for hydrogen ions, and that it should be possible to produce sodium and calcium electrodes by choosing a glass of proper composition or a mineral of the permutit type.

An apparatus has been built at the Massachusetts Institute of Technology by Dr. Gregory Timoshenko for studying controlled sputtering of metals under the impact of positive ions. The apparatus in its present form allows accurate measurements of the rates of sputtering and of secondary electron emission from various solid metals bombarded by argon ions having an energy of 6,000–2,000 volts.

Photographs are submitted by Dr. N. H. Kolkmeijer, C. J. Krom and H. Kunst to show the usefulness of the Ilford 'Fluorazure' screen in shortening the exposure time needed to obtain X-ray photographic patterns of fibres for the analysis of their structure.

Several cases of animals suffering from congenital porphyrinuria, a rare disease in which porphyrin (a red decomposition product of hæmatin, but containing no iron) is excreted, are described by P. J. Fourie and Dr. Claude Rimington. Some of the animals are living, and the authors hope, by means of breeding experiments, to elucidate the mechanism of this peculiar metabolic anomaly, which also renders the skin of the animals sensitive to light.

Prof. J. H. Orton finds that, in the oyster, environmental conditions (that is, higher temperature, rapid feeding and rapid growth) influence the first onset of female sexual maturity. He points out that similar conditions result in the sea-migratory impulse in parr (young salmon in fresh-water). The sexual maturity in salmon, which induces them to return from the sea to fresh-water, appears to depend both upon age and size, which is a factor of environment. This may explain the varying ages of sexual maturity in the salmon and the oyster.

The nocturnal mating habits of the pink bollworm of cotton (*Platyedra gossypiella*) are described by F. A. Squire. The author points out that the moths are attracted by light only during certain hours of the night, which may account for the divergence of opinion expressed on the subject by different observers.

L. Bellingham finds that vaseline, lanoline, rubber lubricant, and certain soaps, have two refractive indexes when tested by the projection refractometer. If melted and dripped on the refractometer prism, the lower index is observed, but if smeared upon the prism so as to prevent orientation, the higher index becomes effective.

During experiments on the fall of electrified oil drops (for the determination of the electronic charge), Y. Ishida has identified four types of drops, according to their shape and the variation in the time of their fall.