

## Societies and Academies

London

The Royal Society, January 27.

E. GLÜCKAUF and F. A. PANETH: Identification and measurement of helium formed in beryllium by gamma rays. While it has been known for some time that the beryllium nucleus, irradiated by  $\gamma$ -rays, emits neutrons, it could not be decided whether the nucleus is thereby transformed into a stable isotope of beryllium of mass eight, or into two helium atoms. By a micro-chemical method, helium was detected in beryllium after irradiation by the  $\gamma$ -rays of radon. In one of the experiments, the number of neutrons simultaneously emitted during the irradiation was determined by measuring the helium produced by these neutrons in methyl borate; a comparison of the two helium quantities showed that the main final product of the  $\gamma$ -irradiation of beryllium is helium and not the beryllium isotope.

J. W. J. FAY, E. GLÜCKAUF and F. A. PANETH: Occurrence of helium in beryls. Various specimens of old beryllium metal have been analysed for helium. As the method employed, in spite of its sensitivity, failed to detect any traces of helium, it must be concluded that the spontaneous production of helium in beryllium is less than  $1.3 \times 10^{-11}$  c.c. of helium per gram beryllium per year. From this figure it follows that the helium content of beryls cannot be explained as a consequence of the spontaneous disintegration of a beryllium isotope of mass eight. In recent years, the helium content of beryls has been attributed to the influence of  $\gamma$ -rays from radioactive minerals in the neighbourhood of the beryls, and to cosmic radiation. From the figures, however, of the preceding paper about the amount of helium produced in beryllium by  $\gamma$ -rays, it follows that the influence of the natural sources of  $\gamma$ -radiation is not nearly sufficient to explain the helium content of beryls. Since, therefore, beryllium does not produce adequate amounts of helium, either under the influence of external radiation or as a consequence of spontaneous disintegration, it seems that the helium content of beryl is not connected with its beryllium content but is due to some other chemical element.

Moscow

Academy of Sciences (C.R., 17, No. 3, 1937).

V. GANTMAKHER and V. ŠMULJAN: The linear spaces having a feebly compact unitary sphere.

V. ANTONOV-ROMANOVSKIJ: Quantitative data on the decrease of phosphorescence of Zn-phosphorus at different temperatures.

F. S. BARYŠANSKAJA: Studies on fluorescence in a layer of a thickness comparable to the wave-length.

L. I. BELJAJEV: Colloidal formations and electro-phoretic phenomena on metals.

L. V. NIKITIN: The electro-chemical method of the study of mechanical deformation of metals.

M. A. ILJINSKIJ and E. S. POKROVSKAJA: The oxidation of anthracene and methylanthracene by chromic acid and by diluted nitric acid.

M. A. ILJINSKIJ and P. B. ROŠAL: (1) Determination of carbazole by way of methylol-derivate. (2) Determination of phenanthrene.

J. V. GREČNYJ: Composition and nature of organic substances from gas-bearing clays of the Melitopol territory.

O. S. VIALOV: The palæogene of the Tadjik depression.

B. A. RUBIN and E. V. ARCIKHOVSKAJA: Relation between oxidation and hydrolysis in a living cell.

F. V. ČIRIKOV: Availability of soil phosphates for the plant.

R. KH. TURECKAJA: Influence of heteroauxin on root formation in perennial plants.

A. A. ISAKOVA: (1) A study of the effect of microbial bacteriorhizal complexes on root formation in different plants. (2) Effect of bacteriorhizal complexes on the development of the sugar beet.

A. A. MIRZAJAN: Digestion stages in *Phlebotomus papatasi* Scop.

A. A. VOITKEVIČ: Morphogenetic activity of different parts of the hypophysis. (8) The influence of the anterior lobes of the hypophysis on the thyroid and the formation of feathers in pigeons.

Vienna

Academy of Sciences, December 2.

ELISABETH M. PRZIBRAM: Spot method for the macroscopic analysis of very small quantities of liquid. The liquid to be tested is sucked up by a cotton thread. This is then dabbed on a paper which has been treated by a reagent and dried. Many tests can be made with the liquid in a single thread.

A. STIFT: Transformation of dysplastically and heteroplastically transplanted hollow bones in amphibians (*Molge cristata* Laur., *Salamandra maculosa* L. and *Rana esculenta* L.).

A. STOCK: Homöosis and speed of regeneration in *Dicippus morosus* Br. et Redt. and in other insects.

K. TZONIS: Electro-meta-narcosis of fish. The duration of the period of paralysis following the passage of a current through the fish is determined for different species.

E. ZEIF: Role of the organs of sight and touch and of the blood stream in the colour changes of the tree frog (*Hyla arborea* L.).

K. GRAFF: Visual colour excesses of bright stars in the region of Cassiopeia.

E. WEGEMANN: Solubility of radium emanation in fats. Data are given for vacuum greases and for animal fats.

G. HEINRICH: Occurrence of discontinuities in the flow of liquids in tubes. There is a discontinuity in the pressure gradient along the outflow pipe of a water-jet pump. This occurs where the jet suddenly expands to fill the whole width of the tube. The stability of the discontinuity is examined theoretically.

O. PESTA: Ponds in the Kelch Alp region at Kitzbühel in the Tyrol.

A. ZAHORKA and K. WEIMANN: Velocity of hydrolysis of vinyl ethyl ether.

E. ABEL and F. FABIAN: Kinetics of halogenate-halide reactions in heavy water.

December 9.

HERTHA PERTZ: Radioactivity of thermal spring waters.

W. FLEISCHMANN and SUSANNE KANN: Test for thyreotropic hormone. The action of thyreotropic hormone on the thyroid gland of the guinea pig is made clearer by injecting colchicine.

K. ZALESKY: A new sub-species of *Sorex araneus* L. from the Dutch island of Terschelling in the North Sea.