Societies and Academies

Dublin

Royal Dublin Society, November 23.

H. H. DIXON and L. A. T. BALLARD: A simple method of showing tension in the sap of a plant. If a branch of *Vitis striata* is clamped sufficiently tightly to close the vessels and to crush the cells around them, and is then cut off from the plant below the clamp and allowed to wilt completely, on afterwards cutting the stem above the clamp under water, the recovery of the shrivelled leaves and sagging petioles will be a matter of hours. Transpiration has caused the water-columns to break with the formation of bubbles in the vessels, and on cutting, atmospheric pressure partially refills the vessels so that the capillary forces around the remaining bubbles lead to their gradual complete solution. The water supply is re-established, and the observed tardy recovery brought about. If, however, the clamped stem is cut under water as soon as the petioles have sagged into a vertical position, but before the leaves show shrivelling, an immediate recovery will be noted, being complete within 10–12 minutes of the cutting. That complete recovery is not instantaneous seems to be due to delay in the release of the tension, owing to the resistance experienced by the water in entering the cut tracheæ, and to semi-permanent deformation of the tissues. The fact that the movements of the petioles at successive nodes are simultaneous is further justification for regarding these immediate movements as due to the release of tension in the water-columns.

J. H. J. POOLE: The theoretical efficiency of cylindrical ionization chambers when used for estimating radon by α-particle counting. When finding the radioactivity of rocks by counting the α-particles due to the resultant radon and products of rapid decay, the number of particles per min. per 10^{-12} gm. of radium may be found by direct experiment. A useful check is afforded by comparing this with the theoretical value. This depends on the dimensions of the chamber, the minimum range within the chamber which the counter can detect, and the distribution of the active deposit. By the use of approximate methods of integration, it is shown that the efficiency of the chamber used should be about 58 per cent. The experimental figure is only slightly below this, indicating fairly complete de-emanation of the rock in the furnace used.

December 14.

ROBERT MCKAY: Conidia from infected bud-scales and adjacent tissue as a main source of primary infection with the apple scab fungus. A definite relation was shown to exist between the severity of apple scab on the trees in 1936, and the number of infected buds occurring in the dormant season, and also between the number of such infected buds and the outbreak and development of the disease in 1937. Such centres of infection explain the appearance of apple scab in the spring of the year on varieties like Bramley's Seedling, in the absence of both scabbed wood and dead over-wintered leaves.

Paris

Academy of Sciences, November 29 (*C.R.*, **205**, 1021–1112).

LUCIEN CAYEUX: The anomalies of the structure and composition of the Albian phosphates of the Paris basin, and some consequences.

GEORGES GIRAUD: New properties of certain equations in which principal values of integrals appear.

MARC KRASNER: The number of superbodies of a given degree of a body of p-adic numbers.

W. KOZAKIEWICZ: The necessary and sufficient conditions of stochastic convergence.

LUCIEN GODEAUX: The points of diramation of multiple algebraic surfaces.

DAVID WOLKOWITSCH: The role of the quadrics of inertia in the theory of elliptical co-ordinates.

GEORGES KUREPA: Monotone transformations of partially ordered ensembles.

ALBERTO GONSALEZ DOMINGUEZ: The integrals of Laplace.

ISAIE MAXIMOFF: A continuous and essentially increasing function.

JACQUES SOLOMON: The quantum mechanics of systems of electrified particles.

HERVÉ FABRE: The displacements of the nodes and apsides in planetary systems.

RENÉ LUCAS: The radiation tensions of transversal waves of inertia and of viscosity of liquids.

AUREL POTOP: Contribution to the study of a method for the comparison of the specific heats of gases at temperatures much higher than the surrounding temperature.

OUANG TE-TCHAO and ANDRÉ LANGEVIN: The state of equilibrium between large and small ions in a gas.

FERNAND GALLAIS: The magnetic properties of the mercury double iodides. Mercury keeps its usual diamagnetism in the double iodides. The view of P. Pascal that these salts may be paramagnetic is not confirmed by these experiments.

HENRI MURAOUR and ALBERT MICHEL-LÉVY: A new method for obtaining the spectra of metals. The pulverization of a metal in contact with a powerful explosive gives high temperature spectra closely connected with Anderson spectra obtained by the exploded wire method.

L. HERMAN and MME. HERMAN-MONTAGNE: Remark on a possible interpretation of the bands of ozone.

SERGE NIKITINE: Theoretical considerations on the dichroism of flow.

JEAN CRUSSARD and SERGE GORODETZKY: Stimulation function of the nuclear reaction Be(α, *n*). The possibility of determining the mass of the neutron by a new method. The method is based on the disentegration of boron by neutrons slowed down in paraffin.

MLADEN PAIĆ: The action of dilute alkaline hydroxides on cupric hydroxide.

LÉVY HERMAN: The polymerization of gases and the equations of state.

PAUL RENAUD: A new conception of chemical inertia.

VICTOR AUGER: Crystallized molybdenum blue. The exact conditions for the production of the crystals are given: Mo_8O_{23} and Mo_9O_{26} are possible formulæ.

MLLE. YVONNE GARREAU: Some addition compounds of the diphenols.

RENÉ TRUCHET: The valencies of carbon.

JEAN WYART: A case of polymorphism by the progressive passage of a crystalline arrangement to a more symmetrical one, observed on leucite.

ROBERT LAFFITTE: The Trias and Lias of Menaa in Aurès (Algeria).

JEAN LACOSTE: The nature of the deep dislocations in the central part of the Prerif (Morocco).

JEAN FELDMANN and MLLE. GENEVIÈVE MAZOYER : The identity of *Hymenoclonium serpens* and the protonema of *Bonnemaisonia asparagoides*.

GEORGES DÉJARDIN, ALBERT ARNULF and RENÉ FALGON : The atmospheric absorption and the coefficients of absorption of ozone in the visible spectrum.

ANTOINE DE CUGNAC : The experimental synthesis of the hairy form of *Bromus sterilis* by double interspecific hybridization.

MARC SIMONET : The caryological study of some species of *Cistus*.

JEAN LOUIS VIDAL : The primary causes of chlorosis on limestone soils. Experiments supporting the view of P. Mazé, Ruot and Lemoigne that chlorosis on limestone soils is due to an iron deficiency, caused by the precipitation of the iron in an insoluble form by the lime.

ANDRÉ PAILLOT : New researches on the histophysiology of the fat body and of the ectodermal tissues of the mulberry tree silkworm during the change of skin.

MARC DE LARAMBERGUE : Pigmentary varieties of *Bulinus* (*Isidora*) *contortus* ; their interest in the genetic analysis of fecundation.

PHILIPPE L'HÉRITIER and GEORGES TEISSIER : A hereditary physiological anomaly in *Drosophila*.

EMILE ROUSSEAU : The isolation of an oxidizing factor from the blood of cancerous patients and of normal subjects. The deficiency of cancerous blood in this factor.

JEAN LOISELEUR : The mode of action of pepsin. Measurements of the electro-kinetic potential of a protein submitted to the action of pepsin confirms the hypothesis according to which proteolysis is preceded by fixation of the pepsin on the protein.

JEAN LE CALVEZ : The spiral chromosomes of the first schizogonic mitosis of the foraminfer *Patellina corrugata*.

CONSTANTIN LEVADITI and ARON VAISMAN : Anti-endotoxic chemotherapy.

Amsterdam

Royal Academy (*Proc.*, **40**, No. 9, Nov. 1938).

E. COHEN, W. A. T. COHEN-DE MEESTER and J. LANDSMAN : Acute tin pest. The presence of small traces of bismuth greatly retards the transformation of white tin into grey tin at − 50° C., but that of small traces of aluminium has the contrary effect.

L. G. M. BAAS BECKING and E. A. HANSON : Note on the mechanism of photosynthesis.

J. G. VAN DER CORPUT : Weyl's method in the theory of numbers (2).

R. WEITZENBÖCK : Trivectors (2).

P. E. VERKADE, J. VAN DER LEE, A. J. S. VAN ALPHEN and M. ELZAS : Researches on fat metabolism (8). Feeding experiments on dogs with sodium salts of normal saturated dicarboxylic acids.

A. G. VAN VEEN and J. C. LANZING : Analysis of provitamins A in blood serum.

G. BROERSMA : Preliminary records of the velocity fluctuations in a boundary layer before and after the transition to turbulent motion.

J. C. VAN HILLE : Influence of magnesium on the relation between chlorophyll content and rate of photosynthesis.

MISS W. A. E. VAN DE GEYN : Age of the Elsloo beds. The Elsloo conglomerate and the overlying thin glauconiferous sandy bed examined in the excavation of the Juliana canal are of Lower Pliocene age.

J. SCHMUTZER : Triangular sugar crystals. Some remarkable crystals obtained from sugar solution which had been treated many times with charcoal and filtered. They showed the same crystallographic angles and optical properties as ordinary cane sugar crystals but had an entirely different habit.

J. ROOS and C. ROMIJN : The oxygen dissociation curve of the cow's blood during pregnancy and the dissociation curve of the blood of the new-born animal during the time immediately after birth.

Vienna

Academy of Sciences, November 11.

E. CLAR : Structure of the southern Radstädter Tauern. The results suggest the operation of two distinct processes in the formation of this region. The first consisted of folding under high pressure. The second consisted of displacements along planes intersecting obliquely the structural elements formed during the first phase.

J. PIA, S. R. N. and K. S. RAO : *Dasycladaceæ* from the intermediate sedimentary layers of the Deccan trap at Rajahmundry in South India.

W. FLEISCHMANN and SUSANNE KANN : Rapid test for sex hormones. The Loewe and Voss test for male sex hormone, which uses mitosis of the mucous membrane of the vesicular gland of the mouse as an indicator, has been improved. Colchicin is injected 39 hours after the injection of the hormone. This arrests mitosis at the metaphase, and thus a larger number of mitotically dividing cells are made visible.

A. STEUER : Determination of the species of *Harpacticus nicæensis* Claus.

A. W. REITZ and R. SABATHY : Studies of the Raman effect (80). Nitrogenous substances (9). Nitriles. Nitriles of unsaturated acids and dicyanide.

November 18.

O. PESTA : Freshwater crabs (*Potamonides*) of southern Greece. From the geographical distribution it is concluded that *Potamon fluviatile* is a direct descendant of *P. potamios*.

F. EIRICH and R. SIMHA : Viscosity of solutions.

W. KNAPP : Phenyl-(2-methyl-naphthyl-1)-amino-*o*-carboxylic acid.

Washington, D.C.

National Academy of Sciences (*Proc.*, **23**, 561–593, Nov. 15).

A. V. MANZA : (1) Some North Pacific species of articulated corallines. (2) New species of articulated corallines from South Africa.

S. CHANDRASEKHAR : The stability of the radiative gradients in the interior of a star. A mathematical discussion.

H. B. TUKEY : Plant parts of deciduous fruits which give evidence of being favourable for tissue culture. Micropylar region of the integuments at time of full bloom, and entire integuments and placental region of the inner wall of the carpel of the peach exised after full bloom, are easily removed aseptically and develop well on culture media.

A. GLEYZAL : Transfinite real numbers.

G. A. MILLER : Groups which contain a Hamiltonian subgroup of odd prime index.

A. D. MICHAL and D. H. HYERS : Differential invariants in a general differential geometry.