

## Societies and Academies

## Paris

Academy of Sciences, October 12 (*C.R.*, 203, 637-696).

LOUIS BOUVIER: Correction and addition relating to the obituary notice of Jean Charcot (*C.R.*, Sept. 21, 1936).

LUCIEN CAYEUX: The impregnation with hydrocarbons of the North African phosphates and their origin.

JULIEN COSTANTIN: The production of wheat in Peru in 1932 and 1934. Discussion of the causes of the reduction in wheat production in Peru, with special reference to rust. There would appear to be an optimum altitude for the cultivation of wheat.

WERNER FENCHEL: Quadratic inequalities between the mixed volumes of convex bodies.

ERVIN FELDHEIM: The orthogonality of the Lagrange fundamental functions of interpolation.

PAUL FLAMANT: Grouping in classes of quasi-analytical functions (*D*).

PAUL MONTEL: Functions defined by series with recurrent coefficients.

KYRILLE POPOFF: The pendular movement of the projectile.

MICHEL DUFFIEUX and LÉON GRILLET: The application to microspectroscopy of the method of the astronomical prism objective.

MARIUS AUBERT: The relations between the Baeyer tension  $\tau$  and the characteristic Raman frequency in the case of the cyclic hydrocarbons. The characteristic Raman frequency of the nucleus appears to be a definite linear function of the tension  $\tau$  due to the deviation of the carbon valencies.

B. ROSEN and L. NEVEN: The absorption of sulphur vapour between 3600 Å. and 5000 Å.

HORIA HULUBEI: Weak emissions in the *L* spectrum of radium (88). Results in tabular form completing the list of stronger lines given in earlier communications (*C.R.*, 203, 399 and 542).

Mlle. MARIE THÉODORESCO: Study by the Raman effect of a tungstotartaric complex compound in water. The results favour the hypothesis that the complex compound  $\text{Na}_2(\text{TH}_2\text{WO}_3)$  exists in solution in water.

GEORGES DARZENS and ANDRÉ LEVY: The synthesis of a new isomer of retene: 1-methyl-9-isopropyl-phenanthrene.

HENRI LONGCHAMBON: The characteristic properties of the palygorskites. Study of the rate of dehydration as a function of the temperature.

JEAN CHEVRIER: Relations between the electric field of the atmosphere and some meteorological factors during the year 1934 at the Observatory of Ksara (Liban).

MARIO BOSSOLASCO: The nature of magnetic disturbances. Detailed discussion of the records obtained by various magnetic observatories of the magnetic storm of April 30, 1933.

RENÉ SOUÈGES: The embryogeny of the Papaveraceæ. The development of the embryo in *Chelidonium majus*.

RAOUL COMBÈS: The experimental production in a submerged plant of the structural characters peculiar to aerial organs.

RAYMOND CHAMINADE: The passage of potassium in soils to the non-exchangeable state.

ARTHUR VERNES: Researches on the specific substance of syphilitic fluids.

ROBERT PAULAIS: The localization of nickel in the organs of lamellibranch molluscs. The nickel is distributed in different proportions in different organs of the mollusc. *Cardium edule* contained a much higher proportion of nickel than the other molluscs examined, and this was confirmed by analysing additional specimens.

PAUL RIOU, GÉRAUD DELORME and HORMISDAS: The distribution of manganese and iron in some conifers from the province of Quebec.

HUGUES GOUNELLE and YVES RAOUL: The sterilizing action of chloropicrine on the eggs of the bed bug, *Cimex lectularius*. Experiments showing that the sterilizing action of chloropicrin on the egg of *Cimex* is certain.

STIG VEIBEL and MME. HANNE LILLELUND: The fermentative hydrolysis of some  $\beta$ -glucosides of tertiary alcohols.

ANDRÉ BOIVIN: The possible co-existence of the complete *O* somatic antigen and of the corresponding polysaccharidic haptene (residual antigen) in certain bacteria.

## Amsterdam

Royal Academy (*Proc.*, 39, No. 7, Sept. 1936).

H. J. JORDAN: The properties of smooth tonus muscles compared with those of unvulcanized, plasticized rubber.

W. A. P. SCHÜFFNER and B. WALCH-SORGDRAGER: Immunity to yellow fever among white mice.

L. S. ORNSTEIN: Scattering of neutrons in matter (1). Theory of the statistics of the scattering of neutrons by an assemblage of protons.

J. CLAY, E. M. BRUINS and J. T. WIERSMA: A temporary excess of ten per cent in cosmic radiation. Two ionization chambers and a counter all showed a sudden increase in the cosmic radiation over several days beginning on May 21.

H. R. KRUYT and G. E. VAN GILS: Electrophoresis of amino compounds.

E. D. WIERSMA: Physical resemblance in connexion with mental similarity (2).

J. J. VAN LAAR: The position of the  $\lambda$ -point in helium.

O. POSTHUMUS: Some Malayan ferns.

H. FREUDENTHAL: (1) Position operators in concrete Hilbert spaces (1). (2) The Friedrich extension of semi-restricted Hermitian operators.

M. EWART: The exact measurement of the specific heats of metals at high temperatures (25). The specific heats and the allotropy of nickel between 0° and 1,000° C.

W. BLEEKER: Meteorological observations on the three Dutch Karakorum expeditions (2).

L. ALGERA: Concerning the influence of temperature treatment on the carbohydrate metabolism, the respiration and the morphological development of the tulip (1).

A. VAN DER MEULEN and IDA LUYTEN: Comparison of the young organs of Spanish, English and Dutch irises.

H. GERTH: The occurrence of isolated calicular plates of *Dinocrinus* in the Permocarboneous of Australia and India and its stratigraphical significance.

J. ARIËNS KAPPERS: Brain-body weight relation in human ontogenesis.

N. SUZUKI: The diencephalic and some other systems in *Xantharpyia amplexicaudata* (2).

C. H. WADDINGTON and J. NEEDHAM: Evocation, individuation and competence in amphibian organizer action.

N. POSTMA : Shape and slope of rest curves of the stretched foot of the snail (*Helix pomatia* L.) in relation to its water content.

G. P. FRETS : The heredity of the size and the form of the seeds of *Phaseolus vulgaris*. The segregation of the  $F_2$  generation.

#### Brussels

Royal Academy (*Bull. Classe Sci.*, 32, 8-9; 1936).

TH. DE DONDER and MISS Y. DUPONT : New theory of the dynamics of continuous systems.

F. H. VAN DEN DUNGEN : Application of Bessel functions to the calculation of solid angles.

L. GODEAUX : Remark on the surfaces of genus zero and bigenus one.

F. SWARTS : Contribution to the study of the action of bromine water on ethylenic compounds. Action on cyclohexene.

J. GÉHÉNIAT : Reduction of the second variation.

P. GILLIS : Certain classes of partial differential equations.

D. S. MITRINOVICH : Asymptotic lines of a class of surfaces.

L. LISON : Histochemical fixation of mineral elements of tissues.

C. PAUC : Introduction of directions in a metrical space. Analysis of the contingent and of the paratangent from the point of view of topology.

#### Cape Town

Royal Society of South Africa, July 15.

J. S. GRIFFITHS : Women's initiation among the Mpondo. Descriptions from native sources and observation of the ceremonies observed at the initiation from girlhood to womanhood among the Mpondo.

A. J. H. GOODWIN : The Mpondo regimental system. An account of the regimental system of the royal houses of the Western Mpondo.

August 19.

J. A. GILMORE : Young's modulus for steel surveying bands. Steel bands hanging in catenary loops between supporting stands are employed in Jaderin's method of measuring base lines. An investigation into the technique of using bands in this way is being carried on in the Surveying and Civil Engineering Departments of the University of Cape Town. An extensometer was used for finding the elastic constants. For steel bands approximately 1/8 in. wide by 1/64 in. thick, the yield point occurred at a stress in the neighbourhood of 53 tons per square inch, while the ultimate stress was approximately 108 tons per square inch. The value of Young's modulus for the same steel was 23,000,000 lb. per square inch.

N. H. ROBERTS : (1) Some studies of 50 cycle wave-forms in insulation testing. An experimental investigation is described of the factors which influence the wave-form of a particular 30 kilovolt testing transformer. The tests show that, if the capacity of the load is limited, a reasonable amount of resistance regulation combined with the use of an induction regulator will yield reliable results except at the lower readings. A calibration based on a knowledge of the crest factor at all settings is necessary. (2) A device for the superposition and simultaneous delineation of two wave-forms on a single cathode ray

oscillograph screen. The paper describes a device in which the two wave-forms are applied alternately, being interchanged 20,000 times per second, and in which the waves may be superposed. Transient phenomena may be studied, and slight differences in wave-form readily shown up.

W. G. SHARPLES : Rock engravings near Beaufort West.

M. A. POCOCK : Studies in South African Algae : *Hydrodictyon* in South Africa (1).

#### Sydney

Royal Society of New South Wales, August 5.

G. J. BURROWS and A. LENCH : (1) Co-ordination compounds of cadmium with tertiary arsines. (2) Derivatives of zinc halides with tertiary arsines.

G. H. HALLIGAN : The causes of ice ages. This is a critical review of the literature on the subject since the year 1864. The question is treated in a new way, the fundamental facts regarding geology, astronomy, oceanography, physics, geography and meteorology, which must be adhered to, being first stated, and the writings judged by the standard thus obtained. The main difficulties encountered are those due to the action and reaction of physical agents brought about by complete changes of atmospheric and oceanic currents, due to cosmical causes. It is believed that no salient fact has been brought forward which vitiates Dr. J. J. Croll's theory advanced in "Climate and Time" in 1890.

A. BOLLIGER : The reaction of creatinine with 1,3,5-trinitrobenzol, 2,4,6-trinitrotoluol, and 2,4,6-trinitrobenzoic acid. Until recently, picric acid was the only colour reagent available for the determination of creatinine. Then it was found that 3,5-dinitrobenzoic acid also gives a useful colour reaction with creatinine; now it is shown that 1,3,5-trinitrobenzol, 2,4,6-trinitrotoluol and 2,4,6-trinitrobenzoic acid react in a similar way. Trinitrobenzol and trinitrobenzoic acid give a red colour with creatinine in alkaline solutions. These reactions are analytically useful, while trinitrotoluol furnishes a colour reaction which is not sufficiently marked for such purposes. All these colour reactions of creatinine have been explained as the formation of organic molecular compounds.

H. FINNEMORE, SUZANNE K. REICHARD and DOROTHY K. LARGE : Cyanogenetic glucosides in Australian plants (5). *Phyllanthus gastroemii*.

G. J. BURROWS and A. LENCH : (1) Derivatives of zinc halides with tertiary arsines. Zinc halides were found to react fairly readily with phenyl dimethyl arsine, diphenyl methyl arsine and *o*- and *p*-tolyl dimethyl arsines to give crystalline compounds which were found to be deliquescent like the zinc halides themselves. The iodides were found to be the most stable. With the exception of the compound  $Zn(PhMe_2As)Cl_2$ , the compounds isolated contained one molecule of zinc halide co-ordinated with two of arsine. (2) Co-ordination compounds of cadmium with tertiary arsines. The authors describe compounds formed by cadmium halides with phenyl-dimethyl arsine, diphenyl methyl arsine and *o*- and *p*-tolyl dimethyl arsine. The compounds are all crystalline, possessing characteristic melting points which decrease from chloride to iodide. With the exception of  $Cd(Ph_2MeAs)_2I_2$ , in which two molecules of arsine are co-ordinated with one of cadmium iodide, all of the compounds isolated contained one molecule of arsine to one of cadmium halide.