

"Science and Culture," Vol. II, Nos. 1 and 2.

"Lingnan Science Journal," Vol. 15, No. 2, June 1936.

"Science Progress," Vol. 31, No. 121, July 1936.

"Scientific American," Vol. 155, No. 1, July 1936.

"Mysore University Calendar for 1935-38," Vol. I, and Supplement to 1934-35.

"Indian Journal of Veterinary Science and Animal Husbandry," Index to Vol. IV.

Catalogues:

"4 Neuerscheinungen, Physiologie-Physiologische Chemie" (Messrs. Walter de Gruyter & Co., Berlin).

"Monthly List of Books on Natural History and Science" (Messrs. Wheldon and Wesley, Ltd.).

ACADEMIES AND SOCIETIES.

National Institute of Sciences of India:

July 19, 1936.—P. B. SARKAR: *On the Constitution of Fluoroform, Chloroform, Bromoform and Iodoform and the Part Played by Prototropic Changes in the Reactions of These Substances*. J. B. LAL: *On the Colouring Matter of Nyctanthes arbor-tristis*, (commonly known as *Harsinghar* in Hindusthani and *Shieuli* in Bengali).—The flowers give a beautiful but fleeting yellow dye which still finds limited application for dyeing silk in Northern India. The name Nyctanthin was given by Hill to this colouring matter. A. G. Perkin identified it with the colouring matter from Indian Mahogany. Kuhn suggested on the basis of his observations that α -quercetin is identical with Nyctanthin. This suggestion is confirmed by further experiments. N. CHOWDHURY: *Notes on Some Indian Species of Lycopodium with Remarks on the Distribution of the Genus in India*.—An account of the genus *Lycopodium* from the points of view of its distribution, anatomy, modes of vegetative propagation and epidermal structure. J. N. MUKHERJEE and M. C. CARBERY reported that clay pans which impede drainage and prevent the penetration of root systems of such cultivated plants, e.g., sugarcane, have been observed in the Barisal Farm in the Bakerganj District of Bengal. They occur about 7"-9" below the surface and appear to be extensive and to arise out of the special properties of the clay. Work is being carried out at the Bengal Government Farm at Dacca and some associated colloidal studies will be made in the physical chemistry laboratory of the Calcutta University. J. N. MUKHERJEE presented a summarised account of investigations in his laboratory carried out by Messrs. S. P. Roy, Chowdhury, R. P. Mitra, S. Mukherjee, B. Chatterjee and H. K. Sen, during the last six years on the electro-chemical properties of acids in a colloidal state. Pure substances as well as hydrogen clays separated from soils have been examined. The results show definitely that the total acidity of such systems depend on a number of factors of which a regular and a specific or irregular cation effect discovered as a result of these investigations are of great theoretical and practical interest both from the point of view of colloidal science and of its applications, e.g., to soil science. The determinations of exchangeable bases, of the base saturation capacity, of

the degree of saturation of the soil and of the soil absorbing complex are carried out on a more or less empirical basis. The investigations carried out with the help of a grant from the Imperial Council of Agricultural Research and of the University of Calcutta provide a basis for a theoretically satisfactory treatment of these subjects. The electrical double layer and the absorption of ions play a very important rôle which is responsible for their properties which render the classical concepts of electro-chemistry inadequate for their theoretical treatment. P. N. GHOSH: *The Distribution of Ultra-Violet Intensity in the Sunlight at Calcutta during the Year 1931-32*.—The subject has great practical value in connection with that branch of applied science known as illumination engineering. Data of the type are unavailable in India. L. A. RAMDAS and R. K. DAVID: *Soil Temperatures*.—Results of experiments carried out at the Central Agricultural Meteorological Observatory at Poona during the last two years to measure the various factors which determine the thermal balance at the earth's surface were presented. Experiments have also been made on the effect of covering the local soil with thin layers of chalk and of typical Indian soils on soil temperatures. The effect of wetting the soil surface and that of a layer of vegetation on soil temperatures have also been investigated. These show that soil temperature can be controlled to a large extent by suitably altering the nature of the surface. Soil temperature in blocks of typical Indian soils when exposed to identical weather factors at Poona show very interesting variations from those in the local soil. These carefully planned experiments are being continued as they are of fundamental interest both to the meteorological and to the agricultural worker. D. L. SEN and DR. NAZIR AHMED in a joint paper described the results of an investigation carried out to find the effect of fertilisers, on the yield, physical properties, chemical constitution and spinning quality of Cambodia cotton. The cotton was grown in adjacent blocks on two types of soil, one naturally fertile which gave a high yield, without any fertilisers, the other rather poor which gave a low yield when no fertilisers were applied. On naturally fertile soil there was no marked difference with regard to the yield and the spinning quality of the cotton with or without any fertilisers. But on

poor soil, not only was the yield profuse but spinning strength of cotton was also higher as a result of the application of fertilisers. The use of fertilisers was found economical when the field is deficient in the elements required by the plant.

Indian Academy of Sciences:

July 1936.—SECTION A.—B. Y. OKE: *Lattice-Theory of Alkaline Earth Carbonates. Part I.—Lattice-Energy of Crystals of Aragonite Type and their Thermo-Chemical Applications.*—Calculations have been made for Aragonite, Strontium Carbonate and Barium Carbonate. The lattice-energy values are verified by a thermo-chemical cyclic process. K. S. GURURAJA DOSS AND B. SANJIVA RAO: *Ageing of Surfaces of Solutions. Part I.—The Study of Variation of Surface Tension of Solutions with Time by the Ring Method.*—It is shown that the ring method is not suitable for the measurement of variation of surface tension with time. S. PARTHASARATHY: *Dispersion of Acoustic Velocity in Organic Liquids.* No dispersion could be detected. K. S. GURURAJA DOSS: *Collision Frequency in Solutions.*—The expressions obtained on the basis of Wheeler's theory of liquids are similar to those obtained by other methods. P. RAMA PISHAROTY: *On the Visibility of Ultrasonic Waves.*—It is suggested that the visibility is due to the amplitude changes brought about by the propagation of a purely corrugated wave-front. S. RAMACHANDRA RAO: *Magnetism and Cold-Working in Metals. Part I.—Polycrystals.*—As a result of cold-working, the diamagnetic susceptibility of bismuth is lowered effectively, while zinc and cadmium show a small decrease. These changes are explained in the light of the existence of distorted layers between the small crystals and of the author's work on metallic colloidal powders. K. NEELAKANTAM AND T. R. SESHADRI: *Pigments of Cotton Flowers. Part III. Karunganni (Gossypium indicum).* S. PARTHASARATHY: *Ultrasonic Velocities in Organic Liquids. Part V.—Some Related Groups.* B. SUNDARA RAMA RAO: *Studies on the Anisotropy of the Optical Polarisation Field in Liquids. Parts IV and V.*—From change of refractivity with temperature, the course of ratio p_2/p_1 which is a measure of the anisotropy of the optical polarisation field is followed. R. ANANTHAKRISHNAN: *The Raman Spectra of Some Boron Compounds (Methyl Borate, Ethyl Borate, Boron-Tri-Bromide and Boric Acid).*—It is found that previously reported frequencies require considerable revision. R. ANANTHAKRISHNAN: *The Raman Spectrum of Cyclo-Propane and Ethylene Oxide.*—Cyclo-propane has been investigated both in the liquid and in the vapour states. M. V. NABAR AND T. S. WHEELER: *The Kinetics of Heterogeneous Organic Reactions (II): The Reaction between Benzyl Chloride and Solid Silver Nitrate in the Presence of Inert Diluents.*—The inhibiting effect of the diluents may be due to absorption on the surface of Silver Nitrate. K. S. GURURAJA DOSS: *Ageing of Surfaces of Solutions. Part II.—Activated Accumulation of Solute Molecules.*—The postulation of activation is very helpful in understanding (a) the

time of variation of surface tension, (b) the high temperature coefficient, and (c) the manifestation of surface pressure. K. L. RAMASWAMY: *Dielectric Co-efficients of Gases and Vapours. Substituted Methanes and Ethane, Cyclopropane, Ethylene Oxide and Benzene.*—Sixteen gases and vapours have been studied. K. C. PANDYA AND T. A. VAHIDY: *The Condensation of Aldehydes with Malonic Acid in the Presence of Organic Bases. Part V.—The Condensation of Anisaldehyde. Part VI.—The Condensation of p-Hydroxy Benzaldehyde.*

July 1936.—SECTION B.—V. RAMANATHA AYYAR AND R. BALASUBRAMANIAM: *Inheritance of Certain Colour Characters in Gram (Cicer arietinum).*—Modes of inheritance in three types of flower colours and thirteen types of seed-coat colours in gram have been studied in crosses between pure lines at Pusa and Coimbatore. MAKUND BEHARI LAL: *A New Species of the Genus Parorchis from Totanus hypoleucos, with Certain Remarks on the Family Echinostomidae.*—A number of parasites from the cloaca of the common summer snipe, *Totanus hypoleucos* have been described. M. S. RANDHAWA: *Occurrence and Distribution of the Freshwater Algae of North India.*—The results of an ecological survey of the freshwater algae of Northern India are reported. MAKUND BEHARI LAL: *A New Genus of Trematodes of the Sub-Family Typhlocelinae from the Shoveller Duck, Spatula clypeata.* PRAKASH CHANDRA JOSHI: *Anatomy of the Vegetative Parts of Two Tibetan Caryophyllaceae—Arenaria musciformis Wall. and Thylacospermum rupifragum Schrenk.*—The internal anatomy and development of the plants which are quite peculiar in their habit and habitat have been described.

National Academy of Sciences of India:

July 29, 1936.—SHUKLA: *Differentiation of a Definite Integral with Respect to a Parameter in Certain Cases when Leibnitz's Rule is Not Applicable.* BHOLANATH SINGH AND P. B. MATHUR: *Apparatus for the Measurement of Respiratory Quotient in Plants.* A. N. PURI: *An Anomaly in the Elastic Behaviour of Indian Rubber.* A. C. ROY: *The Diazo-Compounds of Morphine.* A. C. CHATTERJI: *A Note on the Influence of Lyophilic Colloids on the Wettability of Naphthalene.* A. C. CHATTERJI: *The Numerical Value of Traube's Factor from Wettability Data.* M. P. GUPTA AND JAGRAJ BIHARI LAL: *Chemical Examination of the Seeds of Physalis peruviana or Cape Goose Berry.* R. K. CHATTERJI AND S. DUTT: *Chemical Examination of Oils from the Seeds of (a) Crotonaria Medicagenea, (b) Cassia Occidentalis.* L. D. TEWARI AND S. DUTT: *Dyes derived from 3:4:3':4'-tetraamido-diphenyl.* B. B. BISWAS AND S. DUTT: *Constitution of Fluoranthrenequinone and its Derivatives.*

Indian Association for the Cultivation of Science:

July 1936.—B. C. MUKHERJEE: *On the Linearity of Lorentz Transformation.* D. P. RAYCHAUDHURI AND P. N. SEN GUPTA: *Studies on*

Constant Paramagnetism, Part I. D. P. RAY-CHAUDHURI AND P. N. SEN GUPTA: *Studies on Constant Paramagnetism, Part II.* SUDHENDU BASU AND M. HUSSAIN: *X-Ray Studies on Electro-Deposited Silver.* V. T. CHIPLONKER: *The Rault Depression in Ordinary and Heavy Water.* N. R. TAWDE, S. A. TRIVEDI AND J. M. PATEL: *Ultra-Violet Content of Sunlight at Bombay.* G. N. BHATTACHARYA: *Studies on Some Indian Vegetable Oils, Part II.—Dielectric Constant and Electric Moment.* K. K. ROY: *On An Estimation of Service Area of the Calcutta Station.* S. C. DHAR: *The Study of the Duration of Contact of Pianoforte String with a Hard Hammer Striking Near the End.* JAGANNATH GUPTA: *On the Polarisation of Raman Lines of Formic Acid and Formate and Trichloroacetate Ions.*

Indian Chemical Society :

May 1936.—B. B. DEY AND (MISS) P. LAKSHMI KANTAM: *Studies in the Cotarnine Series. Part VI.—Condensation of Cotarnine with Phosgene.* ABANI K. BHATTACHARYA: *Influence of Dilution on the Molecular Refractivities of Complex Cyanides and Cobalt Amines.* J. K. CHOWDHURY AND T. P. BARDHAN: *Measurement of Molecular Areas of Cellulose from Different Sources by Surface Tension Method—Part II.* PARES CHANDRA BANERJEE: *Use of Vanadous Sulphate as a Reducing agent. Part II.—Estimation of Chlorates, Nitrates and*

Persulphates. HIRENDRA NATH DAS-GUPTA: *Studies in Organo-Arsenic Compounds—Part III.* SHRIDHAR SARVOTTAM JOSHI AND P. N. PANIKKAR: *Studies in the Coagulation of Colloids. Part XII.—‘Zonal Effect’ in the Change of Refractivity during Mutual Coagulations.* SHRIDHAR SARVOTTAM JOSHI AND S. JAYA RAO: *Studies in the Coagulations of Colloids. Part XIII.—‘Zonal Effect’ in the Opacity Changes in the Coagulation of Colloid Manganese Dioxide.* M. GOSWAMI AND B. C. DAS-PURKAYASTHA: *Analytical Uses of Nessler’s Reagent. Quantitative Estimation of Monosaccharides and Disaccharides. Estimation of Furfural—Part II.* RANJIT GHOSH: *Syntheses in Furan Series. Part I.—Synthesis of 2-Ketotetrahydrofuran-4-acetic Acid.* S. S. BHATNAGAR AND N. G. MITRA: *A Critical Examination of Pascal’s Value for the Magnetic Susceptibility of the CH₂-Group.* (MISS) B. N. KATRAK: *Preparation of Compounds Related to Phenacetin.* B. B. DEY AND T. K. SRINIVASAN: *Studies in the Cotarnine Series. Part VII.—Action of Sulphuric Acid on Cotarnine, Formation of Methylene-bisphenol-betain of 2-Methyl-6:7-dihydroxy-8-methoxy-3:4-dihydroisoquinolinium hydroxide.*

Meteorological Office Colloquium, Poona:

7-7-1936. Dr. S. R. Savur.—“A new method for analysing rainfall suggested by Crowe.”

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

Muslim University, Aligarh:

Sir Shafaat Ahmad Khan, kt., D.Litt., of Allahabad University has been co-opted a member of the Executive Council of the University.

At a meeting of the Executive Council of the University, held on the 25th July, the Vice-Chancellor reported that he received a letter from Sahebzada Shahzad Ahmad Khan Saheb informing the University that the late Sardar Sahebzada Sir Sultan Ahmad Khan gave a donation of Rs. 50,000 to the University. The Council gratefully recorded the donation and decided to commemorate the name of the late Sardar Sahebzada Sir Sultan Ahmad Khan in a suitable manner. It was also decided that this amount be put in reserve fund and earmarked for the development of the Department of Technology.

University of Calcutta:

Mr. Nai Aree Supol, a representative of the Government Laboratory, Siam, will shortly visit the University College of Science, Calcutta, to acquaint himself with spectrographic research. Prof. P. N. Ghosh has kindly offered to provide necessary facilities to Mr. Supol.

Mr. C. F. Ball, M.A., and Dr. R. B. Lal, M.B.B.S., D.P.H., D.T.M., have been nominated ordinary Fellows of the University.

A committee has been set up with Dr. T. P. Neogi, Minto Professor of Economics, University of Calcutta, as Secretary, to help students intending to sit for the I.C.S. examination, in their choice of subjects, and to suggest the books they should study and direct them to specialists who would give them necessary guidance in their studies.

The Syndicate has recommended to the Senate to accept with thanks the generous offer of Mrs. Biya Mukherjee, who intends to make over to the University a sum of Rs. 23,000 in cash, in memory of her husband Captain Kalyan Kumar Mukherjee, for creating an endowment for the award of a scholarship for the promotion of Medical Research.

Dacca University.

At the annual convocation held on 28th July, the following honorary degrees were conferred:

Doctor of Laws: H. E. Sir John Anderson, Governor of Bengal and Sir Abdur Rahim, President of the Legislative Assembly; *Doctor of Science:* Sir P. C. Ray and Sir J. C. Bose; *Doctor of Literature:* Dr. Rabindranath Tagore, Sir M. Iqbal, Sir Jadunath Sarkar and Sarat Chandra Chatterjee.