"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).

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ACADEMIES AND SOCIETIES.

National Institute of Sciences of India:

July 19, 1936.—P. B. SARKAR: *On the Constitution of Fluoroform, Chloroform, Bromoform and Idoform and the Part Played by Prototropic Changes in the Reactions of These Substances.* J. B. LAL: *On the Colouring Matter of* Nyctanthes arbortristis, (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 profesu 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 Echinostomidæ.*—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 Algæ of North India.*—The results of an ecological survey of the freshwater algæ of Northern India are reported. MAKUND BEHARI LAL: *A New Genus of Trematodes of the Sub-Family Typhlocœlinæ from the Shoveller Duck,* Spatula clypeata. PRAKASH CHANDRA JOSHI: *Anatomy of the Vegetative Parts of Two Tibetan* Caryophyllaceæ—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 Naphthaline.* 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*) Crotolaria 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*