

Publications of the University of Illinois:—  
 Vol. 33, No. 24, "Papers presented at the 22nd Annual Conference on Highway Engineering held at the University of Illinois on Feb. 21 and 22, 1935."  
 Vol. 33, No. 9, "Chemical Engineering Problems."  
 Vol. 33, No. 32, "Essentials of air conditioning."  
 Vol. 33, No. 16, "Progress Report of the Investigation of fissures in railroad rails."  
 Journal of the Indian Mathematical Society, Vol. II, No. 1.  
 "The Calcutta Medical Journal," Vol. 30, No. 10.  
 "Medico-Surgical Suggestions," Vol. 5, No. 4.  
 "Research and Progress," Vol. II, No. 2.  
 "Bulletin of the Patna Science College Philosophic Society," No. 6.  
 "Monthly Bulletin of Agricultural Science and Practice," XXVI, Nos. 7 to 12; XXVII, Nos. 1 to 3.  
 "The Calcutta Review," Vol. 59, No. 2.  
 "Journal of the American Museum of Natural History," Vol. 37, No. 4.  
 "Journal of the Bombay Natural History Museum," Vol. 35, Index.

"Nature," Vol. 137, Nos. 3465 to 3468.  
 "Journal of Nutrition," Vol. 11, No. 3.  
 "Indian Journal of Physics" Vol. X, Pt. II, and "The Indian Association for the Cultivation of Science," Vol. XIX, Pt. II.  
 "Indian Physico-Mathematical Journal," Vol. 7, No. 1.  
 "Canadian Journal of Research," Vol. 14, No. 3.  
 "Science and Culture," Vol. 1, No. 12.  
 "Science Progress," Vol. 30, No. 120.  
 "Scientific American," Vol. 154, No. 5.  
 "Indian Journal of Veterinary Science and Animal Husbandry," Vol. VI, No. 1.  
 "Arkiv för Zoologie," Band 27 A, Hatten 4, (Nos. 30 to 40).

#### Catalogues:—

"New Books in General Literature," Spring 1936 (Edward Arnold & Co.).  
 "Bell's Miscellany," Spring 1936 (G. Bell & Sons, Ltd.).  
 "Chemie Physik," April 1936 (Verlag Chemie, G. M. B. H.).  
 "Natural History of Science" April 1936 (Wheldon & Wesley, Ltd.).

## Academies and Societies.

### The National Academy of Sciences, India:

April 20, 1936. S. N. BANERJI: *Surface Tension of Some Colloidal Substances*. R. N. MITTRA: *Formation of Periodic Precipitate in the Absence of Foreign Gel*. H. R. MEHRA: *On A New Species of the Genus Harmotrema Nicoll, 1914 with a Discussion on the Systematic Position of the Genus*. N. R. DHAR AND E. V. SESHACHARYULU: *Nitrogen Fixation and Azotobacter Count on the Application of Sugars to the Soil*. N. R. DHAR AND S. K. MUKHERJI: *Molasses as a Manure and as an Agent in the Reclamation of Usar and Alkaline Soil*.—Results obtained from field trials with molasses as a reclaiming agent have been described. Using one ton per acre of alkaline land, the Mysore Agricultural Department could produce 1,200 to 1,800 lbs. of paddy per acre of Usar land where crops failed previously. Similar results have been obtained at Cawnpore and at Allahabad.

### Indian Academy of Sciences:

April 1936. SECTION A.—T. R. SESHADRI AND P. SURYAPRAKASA RAO: *Geometrical Inversion in the Acids derived from the Coumarins. Part II Cis to Trans*.—A rapid and efficient method has been found for preparing coumaric acid and 4-methyl coumaric acid from coumarin and 7-methyl coumarin respectively by treatment with mercuric oxide in the presence of cold alkali. S. PARTHASARATHY: *Ultrasonic Velocities in Liquid Mixtures*.—The variation of the calculated adiabatic compressibility of the mixtures studied was found to be not always strictly proportional to concentration. K. SAMBASIVA RAO: *On a Function connected with the Singular Series*. C. S. VENKATESWARAN: *The*

*Raman Spectrum and Electrolytic Dissociation of Selenic Acid*.—Marked changes in position, intensity, and character of the lines are observed during the transition from the solid to the liquid, and then to aqueous solutions. MAX BORN AND N. S. NAGENDRA NATH: *The Neutrino Theory of Light*.—There is no reason to introduce the spin of the neutrino, and the difference between the two kinds of neutrinos can be described in the same way as the difference between electrons and positrons in Dirac's theory of holes. M. L. N. SHARMA: *On the Error Term in a Certain Sum*. S. CHOWLA: *Pillai's Exact Formula for the Number  $g(n)$  in Waring's Problem*. B. PADHY: *Pillai's Exact Formula for the Number  $g(n)$  in Waring's Problem*. R. K. ASUNDI AND R. SAMUEL: *On the Band Systems and Structure of  $SiF$* .—A new vibrational analysis of the results reported by Johnson and Jenkins. GURDAS RAM AND V. I. VAIDHIANATHAN: *The Design of Falls with Reference to Uplift Pressure*.—The uplift pressures under hydraulic works on porous foundations, such as are built at the falls in canals and rivers, have been determined. A method of obtaining the pressure distribution approximately by the application of theory has also been indicated. B. SUNDARA RAMA RAO: *Studies on the Anisotropy of Optical Polarisation Field in Liquids—Part III*.—In acetic acid the polarisation field becomes more and more anisotropic whereas in nitrobenzene it becomes more and more isotropic with increasing temperature. CH. V. JOGARAO: *Variation of Intensity of Scattered Light with Temperature*.—When the aggregate intensity is suitably separated, the density scattering is always found to increase with temperature as it should, whereas the orientation scattering sometimes increases as in benzene, and sometimes decreases as in nitrobenzene, acetic acid and formic acid. M. RAMANADHAM: *Refractivity and Magnetic Birefringence of Liquid Mixtures*.—



The shapes of the magnetic birefringence curves have been explained quantitatively by taking into consideration the variations of the anisotropic polarisation field coefficients with concentration.

April 1936. SECTION B.—A. SREENIVASAN: *Investigations on the Rôle of Silicon in Plant Nutrition. Part III.—On the Nature of Interaction of Soil or Hydrogels of Iron Oxide or Alumina with Mixtures of Phosphates and Silicates.* A. SREENIVASAN: *Investigations on the Rôle of Silicon in Plant Nutrition. Part IV.—Effect of Silicate Fertilisation on the Growth of the Rice Plant and Yield of Paddy.*—Treatment with sodium silicate increases the yield of grain and straw both under arid and flooded conditions with and without addition of green manure. The response is greater in arid than in flooded series. D. L. SAHASRABUDDHE: *Fixation of Nitrogen by Rice Soils and Rice Plants.*—Field and Laboratory experiments show that rice soils have the power of fixing nitrogen and this fixation is helped by the presence of the growing roots of the rice plant. It has been shown that the rice seed does not carry within it any nitrogen-fixing organisms. T. R. BHASKARAN: *Investigations on the Rôle of Organic Matter in Plant Nutrition. Part XII.—Production of Organic Acids during Decomposition of Cane Molasses in the Swamp Soil.*—It has been shown that the fermentation of lactate in the soil proceeds in accordance with the Fitz equation and the Virtanen theory of fermentation; that of molasses follows a different course. H. CHAUDHURI AND S. S. LOTUS: *Indian Water-Moulds.—II.*—Three moulds have been described, viz., *Achlya prolifer* (Nees) de Bary, *A. klebsiana* var. *indica*, Nov. Var., and *Thraustotheca clavata* (de Bary) Humphrey. G. PALACOIS AND A. BARI: *The Physiology of Indian Nodule Bacteria.*—The physiological reaction of the three types of Indian nodule bacteria (*C. indicus*, *D. biflorus* and *Ps. tetragonolobus*) have been studied and ascertained, as is indicated in the tables. G. PALACOIS AND A. BARI: *A New Micro-Organism associated with the Nodule-Bacteria in Cajanus indicus.*—A new organism (*Bacillus concomitans* nov. sp.) is described, which is found frequently in the nodules formed in *Cajanus indicus*. N. L. SHARMA AND N. C. NANDY: *A Note on the Petrological Classification of the Basic Intrusives of Danta State (N. Gujrat).*—The basic intrusives of Danta State have been classified. The different rock types may also represent the three basic phases of igneous activity in the area during the post-Aravalli period.

### Indian Association for the Cultivation of Science:

March 1936.—S. G. KRISHNAMURTY: *The Spectrum of doubly Ionised Antimony.* B. K. SEN: *The Effects of Heat and Ultra-Violet Light on the Rectifying Action of Some Crystals.* H. P. DE: *Production of Positrons from Bismuth.* S. C. SIRKAR: *On the Nature of Inter-Molecular Oscillations in Some Organic Crystals.* JAGANNATH GUPTA: *On the Interpretation of the Raman Spectra of Formic Acid and Metallic Formates.* SANT RAM: *On the Measurement of  $e/m$  with a Triode Valve.* RIMALENDU SEN-GUPTA AND S. R. KHASTGIR: *Analysis of Signal-Fading Observations.* M. N. SAHA: *The Origin of Mass in Neutrons and Protons.*

### Indian Physical Society:

April 9, 1936. SANT RAM: *On the Measurement of  $e/m$  with a Triode Valve.* S. C. DHAR: *A Study of the Duration of Contact of a Pianoforte String with a Hard Hammer Striking near the End.* S. C. SIRKAR: *On the Intermolecular Vibrations in Some Organic Crystals.* S. C. SIRKAR: *On the Raman Spectra of  $CS_2$ ,  $C_6H_6$ ,  $CH_3Cl$  and  $CCl_4$  in Different States and at Different Temperatures.* K. C. MAJUMDAR: *Spectrum of Doubly Ionized Zinc.* D. P. RAY CHAUDHURI AND P. N. SEN GUPTA: *Studies on Constant Paramagnetism. Part II.* K. ROY: *Further Measurements of Field Strength of Calcutta Transmitter.* G. N. BHATTACHARYYA: *Viscosity and Its Temperature Variation of Some Indian Vegetable Oils.* S. DATTA: *On the Raman Spectra of Some Simple and Complex Halides in Solution and the Nature of Chemical Binding in them.*

### Indian Chemical Society:

February 1936.—B. S. SRIKANTAN: *Behaviour of Gases under the Influence of High Frequency Discharge, Ammonia and Hydrogen.* TEJENDRA NATH GHOSH: *Formation of Heterocyclic Compounds from Thioacetyl-Carbamic Acid Derivatives—Part I.* SISIR KUMAR GUHA: *Dyes Derived from Acenaphthenequinone. Part V.—2-(6-Methyl)-Thionaphthene-acenaphthylene-indigos.* RAM NATH MISRA AND SIKHIBHUSHAN DUTT: *Dyes derived from Acetylene Dicarboxylic Acid.* E. V. MENON AND D. H. PEACOCK: *The Stereochemistry of Trivalent Nitrogen Compounds. Part I.—The Attempted Resolution of Some Substituted Derivatives of Aniline.* JAGARAJ BEHARI LAL: *Constituents of the Seeds of Blepharis Edulis Pers., Part I.* S. KRISHNA AND B. S. VARMA: *Active Principles of Myrsine Africana, Linn. (LATE) A. N. MELDRUM AND G. M. VAD: Constitution of the Reduction Product of Chloral Acetamide. (LATE) A. N. MELDRUM AND G. M. VAD: Condensation of Chloral and Bromal with Polyhydric Alcohols.* MATA PRASAD AND JAGDISH SHANKER: *An X-Ray Investigation of the Crystals of Benzoin.* S. M. MEHTA, M. A. PARMAR AND MATA PRASAD: *Viscosity of Thorium Phosphate Gel-forming Mixtures during Gelation.* WALTER JUNG: *Immersion Pyknometer.* PRAFULLA CHANDRA RAY AND NRIPENDRA NATH GHOSH: *Complex Compounds of Iridium, Part IV.* SHRIDHAR SARVOTAM JOSHI AND S. JAYA RAO: *Studies in the Coagulation of Colloids. Part XI.—Variation of Optical Refractivity during the Coagulation of Colloid Manganese Dioxide and the New Evidence for the Discontinuity of the Change.*

April 23, 1936.—M. GOSWAMI: *Analytical Use of Nessler's Reagent—Part II.—Quantitative Estimation of Monosaccharides and Disaccharides and Estimation of Furfural.* S. G. CHOUDHURY: *Variation of the Cathoretic Velocity of Colloidal Particles during Aggregation.*

### Meteorological Office Colloquium, Poona.

April 7. Mr. Barkat Ali.—“Visual range by day and by night.”  
April 14. Dr. K. Das.—“Radio-meteorographs.”  
April 21. Mr. B. N. Sreenivasiah.—“Wexler's analysis of a warm front type occlusion over the U.S.A. in October 1933; the preparation of ‘atmospheric cross-sections’ for daily weather work.”  
April 28. Dr. S. K. Pramanik.—“G. I. Taylor's paper on ‘Statistical Theory of Turbulence’.”