ACADEMIES AND SOCIETIES.

Indian Academy of Sciences:

March 1937. SECTION A.—CH. V. JOGARAO: *An Optical Method of Determining the Relative Coagulating Powers of Electrolytes.*—The coagulation of arsenic sulphide sol in the presence of various electrolytes has been studied by measurements of depolarisation of the light scattered by the sol. R. ANANTHAKRISHNAN: *The Raman Spectra of Crystal Powders.—IV.—Some Organic and Inorganic Compounds.* The Raman spectra of a number of organic and inorganic crystal powders have been obtained by employing the technique of complementary filters. Many new frequencies have been recorded. The significance of the results is discussed. S. R. SAVUR: *A New Solution of a Problem in Inverse Probability.*—A new "statistical" solution of the problem in inverse probability referred to by Karl Pearson as "the fundamental problem in practical statistics". R. K. ASUNDI AND R. SAMUEL: *Some Remarks on the Birge-Sponer Method of Vibrational Extrapolation.* R. K. ASUNDI AND R. SAMUEL: *Note on the Structure of N_2^+ and its Bearing on the Theory of Valency.* S. RANGASWAMI AND T. R. SESHADRI: *Geometrical Inversion in the Acids Derived from the Coumarins. Part IV. The Behaviour of the Ethers of the* Cis *and* Trans *Acids.* B. L. GULATEE: *Gravity, Geoid and Plumb-Line Deflections in Mountainous Areas.* INDER CHOWLA: *On $\Gamma(k)$ in Waring's Problem and Analogous Functions.* S. ZAFARUDDIN AHMED AND R. D. DESAI: *Heterocyclic Compounds. Part I.—Coumarins from Cyclopentanone-2-Carboxylate and 4-Methyl-cyclopentanone-2-Carboxylate.* R. ANANTHAKRISHNAN: *The Raman Spectra of Some Simple Molecules. (Dimethyl Ether, Phosgene, n-Butane, Ethylene Diamine, Ethylene Glycol, Ethylene Dichloride, Ethylene Dibromide, Acetylene Tetrachloride, Acetylene Tetrabromide and Hexachloroethane.)*—The Raman spectra of the above substances have been studied and the problem of "free rotation" in ethane derivatives is discussed in the light of these results. C. V. RAJAM: *Microphone Acutated Thyratron Relay.*—Details are given of a thyratron valve amplifier circuit which can be used as a simple sound intensity meter.

March 1937. SECTION B.—A. C. JOSHI AND L. B. KAJALE: *Fertilisation and Seed Development in Amarantaceæ.*—A detailed account of embryogeny for the family Amarartaceæ is given. C. BHASHYAKARLA RAO: *A New Species of* Anabæna (Anabæna ambigua *Sp. Nov.*).—A peculiar blue-green alga collected from a few ponds near the Benares Hindu University grounds, has been completely studied and recorded. The results justify its being considered a new species of *Anabæna*. BENI CHARAN MAHENDRA: *A Note on the Distinctive Characters of the Indian Species of* Cylindrophis *Wagler.* A revised key for the genus *Cylindrophis* Wagler, drawn up by Dr. Malcolm Smith has been presented. JOGENDRA NATH MISRA: *The Zygnemaceæ of Kashmir—I.* The first of the series of papers on the algal flora of Kashmir. 19 forms have been recorded and out of these 4 species, 4 varieties and 6 forms are new.

National Institute of Sciences, India:

March 25, 1937.—The Easter Meeting of the National Institute of Sciences of India was held at Allahabad, PROF. M. N. SAHA presiding.

DR. G. R. TOSNIWAL gave an account of the radio studies of the upper atmosphere which was followed by a theoretical paper by the President and MR. R. N. RAI on the propagation of radio waves from the Ionosphere. DR. S. B. DUTT, Reader in Chemistry in the Allahabad University, and his pupils contributed six papers on the chemical analysis of Indian Medicinal Plants. DR. BHATTACHARYA gave an account of his work on the Zoology of Golgi bodies. PROF. BURRIDGE reported cases of Tuberculosis which he had discovered among frogs at Lucknow and propounded a new theory of colour vision. MR. P. C. GUPTA, a student of Prof. Burridge, reported the results of his experiments on the Sodium Iodo Acetate.

National Academy of Sciences, India:

March 2, 1937.—N. R. DHAR AND E. V. SESHACHARYULU: *Nitrogen Fixation and Azotobacter Count on the Application of Carbohydrates and other Energy Materials to the Soils.* S. K. MUKERJI: *Changes in Soil Nitrogen after the Addition of Fresh Cowdung to Soil.*—Fresh Cowdung has been shown to fix atmospheric nitrogen. Molasses accelerate the oxidation of cowdung in soil and increses the total amount of nitrogen fixed. S. PRADHAN: *The Alimentary Canal of Coccinella Septumpunctata.*—The excretory Malpighian tubules reassociated with the high gut in the lady-bird beetle, act as a filter for eliminating waste nitrogenous material contained in the liquid which is mechanically pressed out of the hind-gut into body-cavity. BIRBAL SAHNI AND K. P. RODE: *Fossil Plants from the Deccan Intertrappean Beds at Mohgaon Kalan (C. P.), with a Note on the Geological Position of the Plant-bearing Beds.*—The affinities of the fossil flora of the Deccan Intertrappean Beds strongly support the view, recently revived by Professor Sahni, that the earliest volcanic lavas (traps) of the Deccan were poured out in the Eocene period, that is, soon after the dawn of the Tertiary era. This view was held by the pioneer geologists a hundred years ago, but during the last seventy years, as the result of work done by the Geological Survey of India, the opinion has grown that the earliest traps were older, and of Cretaceous age. This official view of the Survey, although based only upon indirect evidence, has been accepted by geologists, all over the world; but it is opposed to the direct evidence of the fossil plants which have decided Tertiary affinities.

In the first part of this paper PROFESSOR SAHNI shows that the fossil flora of Mohgaon Kalan near Chindwara, originally discovered by Mr. Rode, has Tertiary affinities, like the flora of the rest of the Deccan Intertrappean series. In the second part Mr. Rode describes the geology of the area and shows that the fossiliferous beds really belong to the basal part of the series. The latter fact is important, because if the basal trees of the series is of Tertiary age, then the[re] ures. In

no ground whatever for classifying the higher strata as Cretaceous.

The value of fossil plants as an index of geological age is now being increasingly recognised in India, where the ages of some of the most important rock systems, containing coal, oil, salt and other mineral products, have been elucidated by a study of their plant fossils.

The Indian Mathematical Society:

(*Journal*, 2, *No.* 4.)

V. GANAPATHY IYER: *On Integral Functions of Finite Order and Minimal Type.*—Let $[z_n]$ be a sequence of distinct complex numbers tending to infinity and arranged according to non-decreasing moduli. Let $\sigma(z)$ be the canonical product with simple zeros at z_n. The index of distribution (I.D.) of $[z_n]$ is defined as the greatest lower bound of numbers h such that

$$\Sigma \left| \frac{1}{\sigma'(z_n) z_n^{h+1}} \right|$$

converges. In previous papers, the author has discussed the properties of integral functions bounded at a sequance of points with finite (*i.e.*, not $+\infty$) I.D. The object of the present paper is to discuss certain cases where the I.D. may be infinite while the value of the function at $[z_n]$ is subjected to more stringent hypothesis than mere boundedness. (2) D. D. KOSAMBI: *Differential Geometry of the Laplace Equation.*—Given a linear partial differential equation $a^{ij}u,i,j + b^i u,_i = 0$, the necessary and sufficient conditions are worked out that it should be the Laplace equation associated with some Riemann space. R. VAIDYANATHASWAMY: *A Note on the Morley-Peterson Theorem.*—In this note, the real significance of the well-known Peterson-Morely theorem about a skew hexagon is brought to light, thereby affording not merely a new proof of the theorem, but also its generalisation. S. MINAKSHI-SUNDARAM: *Tauberian Theorems on Dirichlet's Series.*—Two results due respectively to K. Ananda Rao (*Proc. L.M.S.* (2) 34: Theorem 4) and V. Ganapathy Iyer (*Annals of Math.*, **36**, Theorem 4) are generalised. Some remarks are made about the application of these theorems to obtain certain precise results, anticipated by Ananda Rao, on the abscissæ of summability of Dirichlet's series. K. RANGASWAMI: *On the Pedal Quartics of a Quadric.*—A paper in continuation of his paper on the Theory of Normals to a quadric in the *Proc. Ind. Ass. Sc.*, 1. R. C. BOSE: *Analogue of a Theorem of Blaschke.*—Let $r = r(s)$ be the vector equation of a plane curve V, s denoting the affine length. Let $r_1 = r'(s)$, $r_2 = r''(s)$ be the vector equations of the tangent and curvature forms V′, V″. Let ρ be the radius of curvature at any point of V, and r_1, r_2 the lengths of the radii vectors to the corresponding points on V′ and V″, and p_1, p_2 the lengths of perpendiculars from the origin to the tangents at these points. Then it is proved that $r_2 = l^{-\frac{1}{3}}$; $p_1 = l^{\frac{1}{3}}$ where l is the semi-latus rectum of the osculating parabola to V. It is also proved that "on an elliptic convex oval we can find at least three pairs of points, such that the latera recta of the osculating parabolas are equal, and the affine normals are parallel". N. G. SHABDE: The object of this paper is to collect a number of results involving the confluent hypergeometric functions such as the K-functions, D_n functions, Laguerre functions and Bessel functions, some of the results being obtained by operational methods.

Indian Chemical Society:

December 13, 1936.—BALWANT SINGH AND IJAZ ILAHI: *Potentio Metric Studies in Oxidation Reduction Reaction. Part I. Oxidation with Potassium Iodate.* HARENDRA KUMAR ACHARYA: *Properties of Activated Sugar Charcoal Coated with Various Substances. Part I. Liberation of Acid and Alkali by the Action of Neutral Salts in Relation to the Surface Charge.* R. D. DESAI AND M. A. WALI: *Dihydroresorcinols. Part IV. The Condensation of Phenyl dihydroresorcinol with the Aromatic Aldehyde.* MAHENDRANATH RUDRA: *Studies in Vitamin C, Part II. The Vitamin C Contents of the Liver and Muscle of Some Indian Freshwater Fish.* MAHAN SINGH AND MANOHAR SINGH: *Studies on Optical Activity and Chemical Constitution. Part III. Optically Active Acids and Bases.* K. M. SIL, G. C. ROY AND P. N. DAS-GUPTA: *A New Method for the Separation of Lead from Copper and their Subsequent Estimations.* D. N. CHATTERJI, K. R. GANGULY AND M. Z. FARUQI: *Estimation of Small Quantities of Arsenic in Medicolegal Cases.* SHRIDHAR SARVOTTAM JOSHI AND N. HANUMANTHA RAO: *Studies in the Coagulation of Colloids. Part XV. New Aspects of Gold Sol Coagulation.*

January 1937.—SIR UPENDRANATH BRAHMACHARI: *Certain Aspects of the Chemotherapy of Synthetic Hypnotics.* K. N. GAIND: *Synthesis of New Local Anæsthetics. Part I.* SUDHAMOY MUKHERJEE: *The Electrochemical Properties of Palmitic Acid Hydrosols.* DUKHHAHARAN CHAKRAVARTI AND BHOWNI CHARAN BANERJEE: *On the Constitution of Nitro-β-Methylumbelliferone Methyl Ether and of Chlororesorcin.* P. R. KRISHNA SWAMY AND B. L. MANJUNATH: *Chemical Examination of the Roots of* Aristolochia Indica, *Linn.—Part III.* Isolation of the Alkaloid Aristolochine. GOPAL LAL MAHESWARI AND J. B. JHA: *Potentiometric Estimation of Lead with Sulphide Solutions.* M. B. RANE AND K. KONDIAH: *A Method of Qualitative Analysis without the Use of Hydrogen Sulphide.* HIRENDRA NATH BANERJEE: *Chemical Examination of* Clerodendron Infortunatum—*Part I.* K. P. DAVE AND K. S. NARGUND: *A Note on the Preparation of β-4-Methoxy-1-napthoylpropionic Acid.*

Indian Botanical Society:

March 1937.—F. BOERGESEN: *Contributions to a South Indian Marine Algal Flora. I.* K. BISWAS: *Two New Flowering Plants.* B. N. SINGH AND R. B. SINGH: *The Role of Leaf Water-content, Soil Moisture and Plant age on Transpiration of Crop Plants.* B. N. SINGH AND S. C. CHAKRAVARTI: *Unequal Absorption of Ions and Their Rate and Order of Entry from a 3-Salt nutrient.* V. VENKATESWARALU: *A Note on the Development of the Embryo-sac in* Phrynium capitatum.

C. V. KRISHNA IYENGAR: *Development of Embryo-sac and Endosperm-Haustoria in Some Members of the Scrophularineæ.—Part I.*—An account of *Sopubia delphinifolia* G. Don. and *Alonsoa* sp. M. O. P. IYENGAR: *Fertilization in* Eudorina elegans *Ehrb.*

Meteorological Office Colloquium:

February 9, 1937.—MR. S. BASU of the Indian Meteorological Survey, on his return from the meetings of the Regional Meteorological Commission for the Extreme Orient held at Hongkong in January 1937, gave an account of the work done at the meetings of the Commission.

February 16 and 18, 1937.—The Colloquium was addressed by LT.-COL. E. GOLD, D.S.O., F.R.S., (of the London Meteorological Office, and President of the International Commission for Synoptic Weather Information), who visited India on his way back to London from the Hongkong Conference. In his first address, he gave a thrilling and valuable account of his recollections of meteorological work in France during the years of the Great War while for the theme of his second address he chose " Weather Forecasting ".

March 2, 1937.—DR. S. N. SEN: *Long-range Forecasting of the Monsoon with Special Reference to the Everest Expeditions.*

March 16, 1937.—DR. C. W. B. NORMAND: *Criteria of Stability of Particles and Layers of Air in the Atmosphere.*

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

Bombay University:

Royal Institute of Science, Bombay.—Prof. G. R. Paranjpe, Head of the Physics Department, has been granted leave from 20th June to 9th October 1937.

Dr. N. R. Tawde, Lecturer in the Physics Dept., will act as Professor of Physics during the absence of Prof. Paranjpe on leave.

Dr. T. S. Wheeler has been granted the Honorary Degree of M.Sc. by the National University of Ireland.

Under the University Bifurcation of Arts and Science courses, the Institute will discontinue teaching upto Intermediate standard from June 1937. These classes will be transferred to the Elphinstone College.

University of Mysore:

1. *Personnel.*—Dr. E. P. Metcalfe, D.Sc., Vice-Chancellor, has, in continuation of the long vacation from the 1st April 1937, been granted leave preparatory to retirement from service. Mr. N. S. Subba Rao, M.A., Bar-at-Law, Director of Public Instruction in Mysore, has been appointed to be in charge of the duties of the Vice-Chancellor in addition to his own, during the above period or until further orders.

Mr. A.B. Mackintosh, M.A., Professor of English, Maharaja's College, Mysore, has been granted five months' combined leave from the 24th June 1937, in continuation of the long vacation.

2. *Senate.*—The annual meeting of the Senate was held on the 22nd March 1937. Among the propositions that were passed, mention may be made of the following :—

(i) Introduction of an ordinance regulating the course of study in German for B.Sc. Honours students.

(ii) Institution of a separate minima for the papers, thesis and *viva voce* for the Master's Degree examination.

(iii) Revised syllabus in Mathematics for the Intermediate, B.A., and B.Sc. Degree examinations.

(iv) Provision for the admission of L.M.P. diploma holders to the M.B.B.S. degree course, under certain conditions.

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