

ACADEMIES AND SOCIETIES.

Indian Academy of Sciences.

September 1936. SECTION A.—I. Z. SAIYED AND D. D. KANGA: *Chemical Examination of the Fruits of Solanum xanthocarpum*. S. CHOWLA: *Pillai's Exact Formulae for the Number $g(n)$ in Waring's Problem*. N. S. NAGENDRA NATH: *The Visibility of Ultrasonic Waves and Its Periodic Variations*.—A general theory has been developed and it is shown that the periodic visibility is characteristic of any general periodic supersonic wave. R. D. GUPTA: *Distribution of Temperature and Vapour Pressure in the Neighbourhood of a Water-Surface*.—With wind speeds varying from 0 to $2\frac{1}{2}$ metres per second, when the water-surface was warmer than air, there were conspicuous fluctuations of temperature above the water-surface, the maximum fluctuations being at a height of about 1 cm. from the surface. S. SIDDIQUI, R. H. SIDDIQUI AND S. K. SHARMA: *Studies in the Conessine Series. Part II.—Relationship between N-Stability and Pharmacological Action of Conessine and Iso-Conessine*. T. S. WHEELER: *On the Theory of Liquids. Part VI.—The Rate of Reaction in Liquids. Part VII.—Diffusion and Vapour Pressure Phenomena*. S. NIYOGY: *Organo-Metalloid Compounds. Parts I and II.—Stibinic acids corresponding to the trypanocidal arsenic compound "Albert 102," have been prepared and their physiological action examined*. V. GANAPATHY IYER: *On the Maximum Modulus Curves of Holomorphic Functions*. CH. V. JOGARAO: *An Optical Investigation of Some Indian Oils. I.—Depolarisation of the Scattered Light*.—The oils studied showed a depolarisation factor of 100% with incident light horizontally polarised, thus behaving as normal liquids. SATYA PRAKASH: *On Non-Spherical Nature of Colloidal Particles in Relation to the Formation of Jelly Structure*.—It is shown that many of the well-known jelly forming sols do not exhibit magnetic birefringence. The case of mercuri-sulphosalicylic acid sol has been studied in detail. C. S. VENKATESWARAN: *The Raman Spectra of Sulphur and Phosphorus. Part I.—Polarisation and Molecular Structure*.—From the polarisation studies, it is concluded that the P_4 molecule is tetrahedral while the S_8 molecule is considered to be a symmetrical puckered ring made up of two squares of four atoms each, one square placed at 45° with respect to another. B. S. MADHAVA RAO: *Ring-Singularity in Born's Unitary Theory—I*.—An elementary particle is considered as a ring-singularity. B. S. MADHAVA RAO: *A Theorem on Action Functions in Born's Field Theory*.

September 1936. SECTION B.—H. R. BHARGAVA: *The Life-History of Chenopodium album Linn.*—A fairly detailed description of the life-history of one member of the family of the Chenopodiaceae has been provided. R. P. ASTHANA: *Antagonism in Fungi as a Measure of Control in 'Red-Leg' Disease of Lettuce*.—The parasitic vigour of *Botrytis cinerea* can be suppressed by a number of fungi of which *Trichoderma lignorum* and *Phoma* sp. are particularly effective. The filtrates of the medium in which these fungi thrive, produce the same effect, thus suggesting

that the action is due to staling products. L. RAMA RAO: *The Deccan Traps*.—A brief review of the present knowledge of the Deccan Traps has been furnished and a new interpretation of the mode of their accumulation and biological history given. B. S. KADAM: *Genic Analysis of Rice. I. Grain Shedding*.—Studies on the crossing of a wild rice which sheds its grain completely with a Burmese variety, *Paungbalaung 3*, which is a non-shedder, show that this character is completely dominant and is caused by the duplicate genes Sh_1 and Sh_2 . BENI CHARAN MAHENDRA: *On Two Collections of the Ophidian Genus, Cyndrophis Wagler*.—The distinctive features generally recognised between the three species of *Cyndrophis* Wagler do not stand the test of a thorough and intensive scrutiny of a representative collection. A new key for this genus is furnished. M. S. RANDHAWA: *Three New Species of Zygnema from Northern India*.—The reproductive phase of the three remarkable species of genus *Zygnema* studied shows many peculiarities. M. S. RANDHAWA: *A Note on Some Attached Forms of Spirogyra from the Punjab*. BENI CHARAN MAHENDRA: *Contributions to the Bionomics, Anatomy, Reproduction and Development of the Indian House-Gecko, Hemidactylus flaviviridis Rüppel. Part I*.

The National Academy of Sciences,
India:

September 15, 1936.—BINAYENDRA NATH SEN: *On the Direct Formation of Iodides and the Distance of the Closest Approach of Atoms of Iodine*. R. K. SHASTRY: *Theorems Connecting Different Classes of Self-Reciprocal Functions*. RAM BEHARI: *Curved Asymptotic Lines of Ruled Surfaces*.

Indian Mathematical Society:

RAM BEHARI: *Generalisations of the Theorems of Malus-Dupin, Beltrami and Ribaucour in Rectilinear Congruences*.—The generalisations refer to the pitch of the pencil at any ray of the congruence,—a concept which has been defined and discussed in a previous paper by the author, published in *Journ. Ind. Math. Soc.*, Vol. I, No. 4. DURGA PRASAD BANERJEE: *A Note on the Zeros of Parabolic Cylinder Functions of the Second Kind*.

$$\text{Let } E_n(x) = \pm e^{\mp n\pi i} i \sqrt{2\pi} \Gamma(n+1) \times \\ D_{-n-1}(\mp ix) e^{-\frac{1}{2}x^2},$$

where the upper or the lower sign is to be taken according as $I(x) > 0$ or $I(x) < 0$, and where $D_n(z)$ is the familiar cylinder function. When x is not real and n is a positive integer, $E_n(x)$ has been shown by Dr. Watson to be equal to

$$\int_{-\infty}^{+\infty} \frac{e^{-\frac{1}{2}z^2} D_n(z)}{z-x} dz$$

Mr. Banerjee proves in this paper the following theorem:—

The functions $E_n(x)$ and $E_{n+m}(x)$ have no common zeros, $n+1$ being not a negative integer, and m being a positive integer. V. GANAPATHY IYER: *On Integral Functions of Finite Order Bounded at a Sequence of Points*.—Another

paper extending the results of the previous paper in *Journ. Ind. Math. Soc.*, Vol. II, No. 1. (MISS) S. PANKAJAM: *On Euler's ϕ -Function and Its Extensions*.—The author uses a logical argument developed by Dr. R. Vaidyanathaswamy in his paper in *Proc. Ind. Acad. Sci.*, Vol. II, No. 1, to obtain the values of the familiar $\Phi(n)$ in the theory of prime numbers, and to the generalisations of this function by Jordan, Schemmel and Lucas. She also works out a further generalisation which will include Jordan's function as a special case. If $J_{rs}(n)$ denotes the number of sets of r integers ($\leq n$) whose sth greatest common divisor (a concept introduced by R. Vaidyanathaswamy in his paper *loc. cit.*) is prime to n , then the author establishes that

$$J_{rs}(n) = n^r \left[1 - f_{rs}\left(\frac{1}{p_1}\right) \right] \left[1 - f_{rs}\left(\frac{1}{p_2}\right) \right] \dots \left[1 - f_{rs}\left(\frac{1}{p_q}\right) \right]$$

where

$$f_{rs}(x) = x^r + \binom{r}{1} x^{r-1} (1-x) + \dots + \binom{r}{s-1} x^{r-s+1} (1-x)^{s-1}.$$

Society of Biological Chemists, India:

September 1936.—T. R. BHASKARAN: *The Mechanism of Biological Nitrogen Fixation*. (MISS) K. BHAGVAT: *The Digestibility of Caseins in Their Natural and Artificial Environments*. DEWAN BAHADUR SIR T. VIJAYARAGHAVACHARYA: *Agriculture and Population*. A. VENKATASUBBAN: *Some Colloid Chemical Aspects of Paint Manufacture*. M. SREENIVASAYA: *The Present Status of the Spike Problem of Sandal*. DR. N. R. DHAR: *Nitrogen Transformations in the Soil*.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

University of Calcutta:

The Calcutta University has taken on hand the proposal for introducing a degree in architecture. A Committee of the Board of Studies in Engineering has been appointed for drawing up the rules and regulations for the institution of such a degree as also the courses of studies for the same, as an extension of the Intermediate course of studies in Engineering.

Major A. C. Chatterjee, I.M.S., has been invited to deliver a course of lectures as *Basanta Lecturer* of the University for the year 1936 on "The Problem of Malaria in Bengal".

Essays for the award of Basanta Medal for 1936 should be submitted before the 30th April 1937. The subject selected is "Bengali Diet—Its Effects on Health".

Osmania University:

Five Research Scholarships each of Rs. 75 per mensem, tenable for two years have been awarded by the University for Post-M.A. and M.Sc. work this year. Dr. M. Qureshi, Head of the Department of Chemistry, has been appointed Secretary, Board of Research.

Dr. Raziuddin Siddiqi, Professor of Mathematics, at present on study leave in England, has been deputed to attend the London University celebrations as representative of the Osmania University.

Two special evening classes for the teaching of Arabic and Sanskrit have been started this year, for the benefit of the students, members of the staff and the public from outside. Dr. Hamidullah, M.A., LL.B., Ph.D., is conducting the Arabic class while Pandit Harihar Shastri takes the Sanskrit class. Separate classes for the teaching of German and French have been in existence for a number of years in the University.

A Music Association with Professor M. Saiduddin, Head of the Botany Department, as president has been formed with the object of encouraging the cultivation of music among the students of the University.

The Pro-Vice-Chancellor has appointed a Board with Dr. Mir Valiuddin of the Philosophy Department as Secretary, for giving advice to the students seeking to appear for competitive examinations for Hyderabad and All-India Public Services.

The University has suffered an irreparable loss in the death of A. H. Mackenzie, Esq., M.A. D.Litt., C.S.I., C.I.E., its Pro-Vice-Chancellor, which occurred in Scotland on Saturday, the 26th September 1936, after an illness of about six months. When the news of the sad death was received in Hyderabad on Monday the 28th September all the institutions of the University were closed and the staff and the students assembled at a condolence meeting where a resolution expressing feelings of sorrow and sympathy with the bereaved family was passed.

University of Mysore:

Extension Lectures.—Dewan Bahadur Sir T. Vijayaraghavacharya, K.B.E., delivered a lecture on "The League of Nations—Its Future" at Bangalore and at Mysore.

Faculties.—The following have been elected Deans of the reconstituted faculties:—

Faculty of Arts: Mr. V. L. D'Souza; Faculty of Science: Mr. K. S. K. Iyengar; Faculty of Medicine: Mr. S. Subba Rao.

Central Advisory Board of Education:

Mr. V. N. Chandavarkar, Vice-Chancellor of the Bombay University, has been elected member of the Central Advisory Board of Education by the Inter-University Board in the place of Sir S. Radhakrishnan, resigned.