

ACADEMIES AND SOCIETIES

Indian Academy of Sciences:

July 1940. SECTION A.—B. K. NANDI: *Experiments on the synthesis of compounds related to cinchonine and quinine.*—Some quinoline compounds that are structurally related to quinine and cinchonine have been synthesised starting from ethyl quinoline-3-carboxylate and ethyl 2-methoxy quinoline-3-carboxylate respectively. Although it has been found that these new series of compounds are effective against paramæcia, the cinchonine related series have however proved ineffective against avian malaria. T. VIJAYARAGHAVAN: *On decimals of irrational numbers.* BAWA KARTAR SINGH AND M. K. SREENIVASAN: *The kinetics of mutarotation of oxymethylene-d-camphor—Part II.* Traces of moisture accelerate the chemical changes involved in mutarotation catalytically. S. S. PILLAI: *On Waring's problem $g(6) = 73$.* S. S. PILLAI: *Waring's problem with indices $\geq n$.* R. D. DESAI AND (MISS) K. S. RADHA: *Studies in the Friedel-Crafts reaction—Part V.* The action of acetic anhydride and benzoyl chloride on β -methyl resorcyate. M. W. CHIPLONKAR: *Measurement of point discharge current during disturbed weather at Colaba.*—During the year there was an outflow of 30.6 millicoulombs of positive electricity from earth to air, and an inflow of 10.4 millicoulombs from air to earth. HANSRAJ GUPTA: *On the absolute weight of an integer.* S. S. PILLAI: *A note on Gupta's previous paper.* N. JAYARAMAN: *Alteration of tremolite to talc in the dolomite marbles of Yellandu, Warangal District (Hyderabad, Dn.).* During the alteration (a) almost all the calcium is lost, (b) water of constitution and alumina accumulate and (c) ferrous iron gets fully oxidised. It is suggested that meteoric solutions and atmospheric action were mainly responsible for the alteration. N. A. SHASTRI: *Some results involving Angelescu's polynomial $\pi_n(x)$.* C. V. RAMAN AND N. S. NAGENDRA NATH: *Quantum theory of X-ray reflection and scattering. Part I. Geometric relations.*—When X-rays fall upon a crystal, the characteristic vibrations of the crystal lattice may be excited thereby, in much the same way as in the phenomenon of the scattering of light in crystals with diminished frequency, the excitation being a quantum mechanical effect. B. DAYAL SAKSENA: *Analysis of the Raman and infra-red spectra of α -quartz.*—On the basis of the known crystal structure of quartz and the character table for the relevant point group, the symmetry modes of vibration of the atom groups in the unit cell are derived and geometrically represented, and their appearance in the Raman effect and in infra-red absorption is discussed in detail. These theoretical deductions are compared with an extended series of experimental studies on scattering in quartz, and the already known results of infra-red measurements.

July 1940. SECTION B.—I. FROILANO DE MELLO AND JONES DE SA VIEGAS: *The phenomena of dissociation into S and R forms observed*

among bacteria do also occur in yeast cultures. M. A. BASIR: *Nematodes parasitic in Indian-cockroaches.* I. FROILANO DE MELLO: *A report on the characters and identification of the yeasts living in commensalism in the intestine of some laboratory animals.*

August 1940. SECTION A.—C. V. RAMAN AND P. NILAKANTAN: *Reflection of X-rays with change of frequency.—Part IV. Rock-salt.*—The experimental results support the expectation that the oscillation of the interpenetrating lattices of sodium and chlorine ions should vary the structure amplitudes of the crystal in such a way that the halved spacings which give strong unmodified reflections should also give strong modified reflections in the same order of relative intensity. B. K. SINGH AND A. B. LAL: *Studies on the dependence of optical rotatory power on chemical constitution—Part XVIII.* The rotatory dispersion of stereo-isomeric 3-nitro-o-toluidino-, 5-nitro-o-toluidino-, 2:3-toluylenebisamino- and 2:5-toluylenebisaminomethylenecamphors. S. S. PILLAI: *On normal numbers.* M. PRASAD AND S. S. DHARMATTI: *Molecular structure of some selenium compounds determined by magnetic method.* Se_2Br_2 , Se_2Cl_2 , H_2SeO_4 , Ag_2SeO_3 and SeOCl_2 have been studied. S. S. PILLAI: *On a linear diophantine equation.* S. S. PILLAI: *On Waring's problem with powers of primes.* RAM BEHARI: *A theorem on normal rectilinear congruences.* P. RAMA PISHAROTY: *The Young's modulus of diamond.* The modulus in any direction lying in the octahedral plane is 5.5×10^{12} dynes/cm.² The measurements were made by an improved "scale and telescope" method of Voigt. S. S. DHARMATTI: *Molecular structure of some tellurium compounds determined by magnetic method.* H_2TeO_3 , TeCl_4 , TeBr_4 , $\text{H}_2\text{TeO}_4 \cdot 2\text{H}_2\text{O}$, $(\text{CH}_3)_2\text{TeI}_2$, $(\text{CH}_3)_2\text{TeCl}_2$ have been studied. K. S. K. IYENGAR: *A property of integral functions with real roots and of order less than two.* B. K. SINGH AND A. B. LAL: *Studies on the dependence of physiological action on chemical constitution—Part I.* Difference in odour of d-, l-, and dl-derivatives of amino- and bisaminomethylenecamphors.

August 1940. SECTION B.—T. S. RAGHAVAN AND K. R. VENKATASUBBAN: *Studies in the South Indian Chillies—I. A description of the varieties, chromosome numbers and the cytology of some X-rayed derivatives in Capsicum annum Linn.* J. J. ASANA: *Chromosomes of Typhophtera donovani don. (Tettigonidæ).* B. P. PAL AND T. NARAYANA RAO: *Ovule Mortality in Gram (Cicer arietinum L.).* SHRI RANJAN: *A Preliminary note on the X-ray Mutants of Pusa (52) Wheat.*

Indian Association for the Cultivation of Science (Proceedings):

April 1940.—N. BAGCHI: *The secondary K-Absorption Spectra of Sulphur.* S. DEB: *A note on the origin of the D-layer.* S. S. BANERJEE