"Experimental Station Record," Vol. 71, No. 6; Vol. 72, No. 1.

"Indian Forester." Vol. 61, No. 2, February 1935: No. 3, March 1935.

"Forschungen und Fortschritte," Vol. 12, Nos. 4-6.

"The Quarterly Journal of Geological, Mining and Metallurgical Society of India," Vol. 6, No. 4.

"Report on the 3rd Imperial Mycological Conference," 1934.

"Report of the 22nd Annual Conference of Educational Associations," held at the University College, London, 1934.

"Union of South Africa—Fisheries and Marine Biological Survey" Report No. 11, for the year ending December 1933.

"Report of the Fermentation Industries for 1934," by R. H. Hopkins and F. W. Norris.

"Second Report of the Royal Institute of Science, Bombay" (1926-1934).

"Indian Journal of Veterinary Science and Animal Husbandry," Vol. 4, No. 4, December 1934.

"Scripta Mathematica," Vol. 3, No. 1, January 1935.

"Nature," Vol. 135, Nos. 3404-3407.

"Natural History," January 1935 and February 1935.

"The Journal of Nutrition," Vol. 9, Nos. 1 and 2.

"Journal of the Osmania University College," Vol. 2, 1934.

"The Journal of Chemical Physics," Vol. 3, No. 2.

"Journal de Chimie Physique," Tome 31, No. 10; Tome 32, No. 1.

"The Indian Trade Journal," Vol. 116, Nos. 1494-1498.

"Indian Journal of Medical Research," Vol. 22, No. 3, January 1935.

"Marriage Hygiene," Vol. 1, Nos. 1-3, 1934-35.

"Department of Commercial Intelligence and Statistics, India,—Monthly Statistics of the Production of Certain Selected Industries of India" October 1934, No. 7 of 1934-35.

"Bulletin of the Patna Science College Philosophical Society," No. 5, January 1935.

Academies and Societies.

Indian Academy of Sciences.

(*Proceedings*, Vol. I, No. 8.)

SECTION A.

B. V. RAGHAVENDRA RAO: *Examination of Molecularly Scattered Light with a Fabry-Perot Etalon. Part II. Liquids: Toluene and Carbon Tetrachloride.*—It is found that the relative intensities of the central to the outer Doppler components is much greater for carbon tetrachloride than for toluene. The shift, reported by Cabannes, of the central Rayleigh line towards the red is unreal and is due to the fluctuations of temperature and pressure of the surroundings. T. S. SUBBARAYA: *On the Analysis of the Band Spectrum of Cadmium.*—The peculiar behaviour of the ground state, observed by the author for mercury, in having $\Delta F^{(v)}$'s which increase at first and then decrease, and in having a large anharmonic term, is found also in the case of cadmium. M. A. GOVINDA RAU AND B. N. NARAYANASWAMY: *Effect of Solvent in Dipole Moment Measurements.—Polarisation and Moment of Nitro-benzene.*—Six different solvents have been used, and the structure of the $-NO_2$ group is discussed. M. A. GOVINDA RAU: *Theory of the Solvent Effect in Dipole Moment Measurements.*—On the basis of the theory of Raman and Krishnan of anisotropic field constants prevailing in a liquid medium, a rigorous expression is derived for the polarisation of a solute in infinite dilution in a non-polar solvent, after eliminating the influence of the solvent. A. N. MELDRUM AND K. S. VAIDYANATHAN: *Synthesis of Substances Related to Cochinillic and Carminic Acids.*—The synthesis is effected through the condensation of chloral with 5-hydroxy-*m*-toluic acid. S. CHOWLA: *On Sums of Powers.* S. CHOWLA: *Some Infinite Series.* S. CHOWLA AND S. SASTRY: *On Sums of Powers.* P. K. SESHAN: *Chemical Studies on Coal.*—A study of a number of coals from the Indian and the American coalfields shows that cellulose is destroyed very much more rapidly than lignin at the earlier stages, and more slowly than lignin at the later stages of coalification. R. K. ASUNDI, C. M. BHASKER RAO AND R. SAMUEL: *On the Absorption Spectra of Some Organo-Metallic Compounds.*—Dimethyl, diethyl and diphenyl mercury, and diphenyl lead are among those studied in the vapour state. The results are discussed with Frank-Condon diagrams. K. NAGABHUSHANAM: *On the Form* $\sum_{r=1}^{n} p_r\, dq^r$ — *Hdt.* S. CHOWLA: *The Lattice Points in a Hypersphere.*

SECTION B.

S. S. PATWARDHAN: *On the Structure and Mechanism of the Gastric Mill in Decapoda. III—Structure of the Gastric Mill in Anomura.*—The seven types of Anomura examined contained a complex gastric mill. A brief account of the cordiac and the pylorie stomach and a comparative account of the principal ossicles of the gastric mill is given. S. S. PATWARDHAN: *On the Structure and Mechanism of the Gastric Mill in Decapoda. IV.—The Structure of the Gastric Mill in Reptantous Macrura.*—The suborder Macrura can be divided into two groups (*a*) Reptantous Macrura comprising crayfishes and lobsters, and (*b*) Natantous Macrura comprising prawns and shrimps. The former group is characterised by a universal presence of the gastric mill. BAHADUR SINGH AND T. N. SHIVAPURI: *The Gametophytes of Neptunia oleracea, Lour.* B. N. SINGH AND R. S. CHOUDHURI: *Induced Morphological, Physiological and Chemical Variations Following Seed-Exposure to X-Radiation in* Nicotiana tabacum.—As a result of the treatment with softer doses more vigorous and healthy crops can be produced. Variabilities in offspring are produced by X-radiation. T. EKAMBARAM AND RAMA RAO PANSE: *Contributions to Our Knowledge of* Balanophora. I.—The morphological relationships of the host with parasite as well as the manner of origin of the inflorescence has been dealt with.

Indian Chemical Society.

(Vol. XII, No. 1.)

C. PRASAD AND J. B. JHA: *Potentiometric Estimation of Copper with Sodium Sulphide.* B. K. BANERJEE: *Studies in Acid Anhydrides. Action of Semicarbazides on Anhydrides of Dibasic Acids.* B. K. CHATTERJI AND B. L. VAISH: *A Note on the Determination of the Viscosities of Solutions by the Scarpa Method.* D. N. GHOSH: *On a New Type of Liquid-Liquid Junction.* EDWARD BARNES: *A Note on the Reduction of Selenium Dioxide by Carbon Monoxide.* PULIN BEHARI SARKAR: *On the Tensile Strength of Jute-fibre.* A. R. GHOSH AND B. C. GUHA: *Vitamin C in Indian Food-stuffs.* SALIMUZZAMAN SIDDIQUI AND RAFAT HUSSAIN SIDDIQUI: *The Alkaloids of* Rauwolfia Serpentina, *Benth. Part II. Studies in the Ajmaline Series.* H. M. MAPARA: *A Note on the Influence of Acidity of Agar on the Liesegang Rings of Lead Chromate and Lead Iodide.* PRIYADARANJAN RAY AND ANIL KUMAR MAZUMDAR: *Hydrazinates of Metallic Thiosulphates.* J. C. GHOSH AND SUKUMAR SEN: *On the Synthesis of Higher Paraffins from Water Gas. The Use of Promoters for Activating Iron-copper Catalyst.* S. M. ABDULLAH: *Addition of Compounds containing Reactive Methylene Group with Phenylvinylketone.*

Reviews.

HANDBUCH DER RADIOLOGIE. Herausgegeben von Prof. Dr. Eric Marx. Band 6: Quanten-mechanik der Matiere und Strahlung. Zweite Auflage der "Theorien der Radiologie." Teil 1: Atome and Elektronen. Pp. 466. Price 43-R.M. (Leipzig: Akademische Verlagsgesellschaft. m.b.H., 1934.)

The first part of this volume is devoted to the quantum mechanics of electrons and atoms and is divided into four chapters dealing respectively with the general theory, excitation and ionisation, electron theory of metals and nuclear physics. The third chapter is the shortest in the book covering about 50 pages and the last chapter is the largest with about 200 pages. While the scope of this Handbook is naturally more limited than the well-known *Handbuch der Physik* of Geiger and Scheel, it possesses all the advantages that a condensed account can give.

Chapter I:—This chapter contains all the essentials, from the point of view of a Physicist, of the theoretical portion of quantum mechanics. The knowledge of mathematics assumed on the part of the reader is not very great, such topics like the theory of groups, Hilbert space and matrices not being treated in any detail. A striking omission is an account of quantum statistics which is of the highest importance in special branches, specially the electron theory of metals. This chapter contains an article on mathematical preliminaries which is as devoted entirely to eigenfunctions and is as sweet as it is short. A very welcome feature of this article is the inclusion of Perron's theorem on the nodal points (lines or surfaces) of a wave function. The best part of the chapter is § 8 which gives a masterly exposition of Dirac's theory of the electron in the short space of twelve pages.

Chapter II:—This chapter contains a very full account of the experimental results relating to excitation and ionisation. To realise the vast amount of experimental work done in this branch one need only compare this chapter with the well-known book of Franck and Jordan on the excitation of quantum jumps by collision. One would however have wished to see in this chapter a little of the theory of the subject developed succinctly, at least the theory of collisions. Also the account given of thermal effects is rather inadequate. On pp. 223 and 225 the name of Saha is curiously written as "Megh nad Saha". The word "neutron" appears on p. 194, but a perusal of the article in question shows that the authors are using it in the sense of the neutral H-atom. It must however be pointed out that such a comprehensive treatment of the subject collected in one place is perhaps difficult to find elsewhere and this is specially true of photo-ionisation in the Röntgen region and excitation and ionisation of atoms in solid bodies.

Chapter III:—The theoretical aspect of the electron theory of metals can be formulated, thanks to the Fermi-Dirac statistics, in such a logical way that it is possible to present a connected account of the subject in a short compass. The distinguished author of this chapter, who is a recognised authority in the field, has made use of this fact in presenting what is easily one of the most readable accounts of the subject. After preliminary theoretical considerations, the Fermi-Dirac statistics is explained and direct applications are made to the passage of electrons through metallic surfaces, optical and X-rays properties of metals and to