

## INDEX TO VOL. XCVI. (A)

- Address of the President, December 1, 1919, 311.
- Adsorption of gases—theoretical adsorption isostere and isotherm, experimental verification (Williams), 287, 289, 298.
- Airey (J. R.) Zonal Harmonics of High Order in Terms of Bessel Functions, 1.
- Algebra, linear associative, suitable for electromagnetic relations and relativity theory (Johnston), 331.
- Archbutt (S. L.) See Rosenhain and Archbutt.
- Area of surfaces (Young), 71.
- Armstrong (E. F.) and Hilditch (T. P.) A Study of Catalytic Actions at Solid Surfaces. I.—Hydrogenation of Unsaturated Fats in the Liquid State in Presence of Nickel, 137; II.—The Transference of Hydrogen from Saturated to Unsaturated Organic Compounds in the Liquid State in Presence of Metallic Nickel, 322.
- Aston (F. W.) Experiments with Perforated Electrodes on the Nature of the Discharge in Gases at Low Pressures, 200.
- Atmospheric Stirring measured by Precipitation (Richardson), 9.
- Ayrton (H.) On a New Method of Driving off Poisonous Gases, 249.
- Bairsto (G. E.) On the Variation with Frequency of the Conductivity and Dielectric Constant of Dielectrics for High-frequency Oscillations, 363.
- Bakerian Lecture (Strutt), 272.
- Balmer series, intensity decrement in (Merton and Nicholson), 112.
- Bessel functions, zonal harmonics in terms of (Airey), 1.
- Biotite, transparency of, to infra-red radiations (Martin), 185.
- Bone (W. A.) and Sarjant (R. J.) Researches on the Chemistry of Coal. Part I.—The Action of Pyridine upon the Coal Substance, 119.
- Brown (E. W.) On the Determination of the Secular Acceleration of the Moon's Longitude from Modern Observations, 69.
- Cantilevers, solution for flexure of, and influence of manner of fixing the built-in end (Seegar and Pearson), 211.
- Catalytic actions at solid surfaces. II.—Hydrogenation of unsaturated fats in presence of nickel (Armstrong and Hilditch), 137, 322.
- Chapman (S.) A Note on Dr. Chree's Recent Discussion of Two Magnetic Storms, 424.
- Chree (C.) Magnetic Storms of March 7-8 and August 15-16, 1918, and their Discussion, 32; — An Explanation of Criticisms on Dr. S. Chapman's Recent Paper "An Outline of a Theory of Magnetic Storms," 426.
- Clouds, measurement of water in (Richardson), 19.
- Coal, chemistry of. I.—Action of pyridine on coal substance (Bone and Sarjant), 119.
- Conductors, parallel cylindrical, in electrical problems (Whipple), 465.
- Crookes (Sir W.) Obituary notice of, i.
- Curtis (W. E.) The Value of the Rydberg Constant for Spectral Series, 147.
- Dielectrics, variation with frequency of conductivity of, for high-frequencies (Bairsto), 363.
- Diffracting boundaries, radiation from laminar (Ghosh), 257.
- Discharge in gases at low pressures, experiments on nature of (Aston), 200.
- Eccles (W. H.) and Vincent (J. H.) On the Variations of Wave-length of the Oscillations generated by Three-electrode Thermionic Tubes due to Changes in Filament Current, Plate Voltage, Grid Voltage, or Coupling, 455.

- Electrical problems, equal parallel cylindrical conductors in (Whipple), 465.
- Electron ring theory of atoms (Schott), 395.
- Electrons, scattering of X- and  $\gamma$ -Rays by rings of (Schott), 395.
- Flexure of cantilevers of certain cross-sections, de Saint-Venant solution for (Seegar and Pearson), 211.
- Foster (G. C.) Obituary notice of, xv.
- Garnett (J. C. M.) On certain Independent Factors in Mental Measurements, 91.
- Gases, adsorption at low and moderate concentrations (Williams), 287, 289, 298.
- Gases, new method of driving off poisonous (Ayrton), 249.
- Ghosh (P. N.) On the Colours, of the Striae in Mica, and the Radiation from Laminar Diffracting Boundaries, 257.
- Hilditch (T. P.) See Armstrong and Hilditch.
- Hydrogen, secondary spectrum of (Merton), 382.
- Hydrogenation of unsaturated fats in presence of nickel (Armstrong and Hilditch), 137, 322.
- Isotopes, spectra of (Merton), 388.
- Jeffreys (H.) On the Relation between Wind and Distribution of Pressure, 233.
- Johnston (W. J.) A Linear Associative Algebra suitable for Electromagnetic Relations and the Theory of Relativity, 331.
- Larmor (Sir J.) On Generalized Relativity in connection with Mr. W. J. Johnston's Symbolic Calculus, 334.
- Light, diffusion by rain, cloud, or fog (Mallock), 267.
- Magnetic Storms of 1918 and their discussion (Chree), 32 ; (Chapman), 424 ; (Chree), 426.
- Magnetic susceptibilities of low order, measurement of (Wilson), 429.
- Mallock (A.) Diffusion of Light by Rain, Cloud, or Fog, 267.
- Martin (L. C.) The Transparency of Biotite to Infra-red Radiations, 185.
- Medals, presentation of, 318.
- Mental measurements, independent factors in (Garnett), 91.
- Merton (T. R.) On the Secondary Spectrum of Hydrogen, 382 ; — On the Spectra of Isotopes, 388 ; — and Nicholson (J. W.) Note on the Intensity Decrement in the Balmer Series, 112.
- Metals, inter-crystalline fracture of, under prolonged stress (Rosenhain and Archbutt), 55.
- Moon's longitude, determination of secular acceleration (Brown), 69.
- Nicholson (J. W.) See Merton and Nicholson.
- Obituary Notices :—Crookes, Sir W., i ; Swan, Sir J. W., ix ; Foster, G. C., xv.
- Oscillations generated by three-electrode thermionic tubes, variations of wave-length of (Eccles and Vincent), 455.
- President's Address, December 1, 1919, 311.
- Rain, cloud, or fog, diffusion of light by (Mallock), 267.
- Relativity, an associative algebra suitable for theory of (Johnston), 331 ; — generalized, in connection with Johnston's calculus (Larmor), 334.
- Richardson (L. F.) Atmospheric Stirring measured by Precipitation, 9 ; — Measurement of Water in Clouds, 19.

- Rosenhain (W.) and Archbutt (S. L.) On the Inter-crystalline Fracture of Metals under Prolonged Application of Stress (Preliminary Paper), 55.
- Rydberg constant, value of, for spectral series (Curtis), 147.
- Sarjant (R. J.) See Bone and Sarjant.
- Schott (G. A.) The Scattering of X- and  $\gamma$ -Rays by Rings of Electrons—a Crucial Test of the Electron Ring Theory of Atoms, 395.
- Seegar (M.) and Pearson (K.) De Saint-Venant Solution for the Flexure of Cantilevers of Cross-Section in the form of Complete and Curtate Circular Sectors, etc., 211.
- Selenates, double, of cobalt group (Tutton), 156.
- Sodium, line spectrum of, excited by fluorescence (Strutt), 272.
- Spectra of Isotopes (Merton), 388.
- Spectral series, value of Rydberg constant for (Curtis), 147.
- Spectrum of hydrogen, secondary (Merton), 382; — of sodium as excited by fluorescence (Strutt), 272.
- Striæ in mica, colours of (Ghosh), 257.
- Strutt (Hon. R. J.) Bakerian Lecture: A Study of the Line Spectrum of Sodium as excited by Fluorescence, 272.
- Swan (Sir J. W.) Obituary notice of, ix.
- Taylor (G. S.) Tidal Friction in Irish Sea, 330.
- Thomson (Sir J. J.) Anniversary Address, December 1, 1919, 311.
- Tidal Friction in Irish Sea (Taylor), 330.
- Tutton (A. E. H.) Monoclinic Double Selenates of the Cobalt Group, 156.
- Variables in multiple integral, change of independent (Young), 82.
- Vincent (J. H.) See Eccles and Vincent.
- Whipple (F. J. W.) Equal Parallel Cylindrical Conductors in Electrical Problems, 465.
- Williams (A. M.) The Adsorption of Gases at Low and Moderate Concentrations.—Part I, 287; Part II, 289; Part III, 298.
- Wilson (E.) The Measurement of Magnetic Susceptibilities of Lower Order, 429.
- Wind and pressure distribution, relation between (Jeffreys), 233.
- X- and  $\gamma$ -Rays, scattering by rings of electrons (Schott), 395.
- Young (W. H.) On the Area of Surfaces, 71; — On Change of the Independent Variables in a Multiple Integral, 82.
- Zonal Harmonics in terms of Bessel Functions (Airey), 1.

END OF THE NINETY-SIXTH VOLUME (SERIES A).

