

## INDEX TO VOL. LXXXV. (A)

- Airey (H. M.) See Eccles and Airey.
- Alkali metals, dispersion in vapours of the (Bevan), 58.
- Allen (H. S.) The Path of an Electron in Combined Radial Magnetic and Electric Fields, 257.
- Alloys of aluminium and zinc, constitution of (Rosenhain and Archbutt), 389; — of iron and carbon, chemical physics of precipitation of free carbon from (Hatfield), 1.
- Aluminium-zinc alloys, constitution of (Rosenhain and Archbutt), 389.
- Andrade (E. N. da C.) The Distribution of Slide in a Right Six-face subject to Pure Shear, 448.
- Appleby (M. P.) See Berkeley (Earl of) and Appleby.
- Atmosphere, mineral constituents of dusty (Hartley), 271.
- Atmospheric electricity over the ocean (Simpson and Wright), 175.
- Atomic weights, Dr. Stoney's logarithmic law of (Rayleigh), 471; — (relative) of nitrogen and sulphur (Burt and Usher), 82.
- Ayrton (W. E.) Obituary notice of, i.
- Bakerian Lecture (Strutt), 219.
- Barker (J. T.) See Donnan and Barker.
- Beatty (R. T.) The Ionisation of Heavy Gases by X-rays, 230.
- Beck (C.) The Pupil of an Optical System with regard to Perspective, 462.
- Berkeley (Earl of) and Appleby (M. P.) On the Boiling Point of Water, 477; — On the Boiling Points of some Saturated Aqueous Solutions, 489.
- Bevan (P. V.) The Absorption Spectra of Lithium and Cæsium, 54; — Dispersion in Vapours of the Alkali Metals, 58.
- Boiling points of water and saturated solutions (Berkeley and Appleby), 477, 489.
- Boltwood (B. B.) Report on the Separation of Ionium and Actinium from certain Residues and on the Production of Helium by Ionium, 77.
- Bousfield (W. R.) See Glazebrook, Bousfield, and Smith.
- Bousfield (W. R. and W. E.) The Specific Heat of Water, 302.
- Bragg (W. H.) and Porter (H. L.) Energy Transformations of X-Rays, 349.
- Bromine, vapour pressure and apparent superheating of (Cuthbertson), 306.
- Burt (F. P.) and Usher (F. L.) The Relative Atomic Weights of Nitrogen and Sulphur, 82.
- Carbon disulphide, compound produced from, by silent electric discharge (Dewar and Jones), 574.
- Clocks, pendulum, and their errors (Mallock), 505.
- Colours, iridescent, of birds and insects (Mallock), 598.
- Cook (S. S.) See Parsons and Cook.
- Crowther (J. A.) On the Energy and Distribution of Scattered Röntgen Radiation, 29.
- Cuthbertson (C. C. and M.) An Optical Method of Measuring Vapour Pressures: Vapour Pressure and Apparent Superheating of Solid Bromine, 306.
- David (W. T.) Radiation in Explosions of Coal-gas and Air, 537.
- Dewar (Sir J.) Production of Solid Oxygen by the Evaporation of the Liquid, 589; — and Jones (H. O.) On the Gaseous Condensable Compound, Explosive at Low

- Temperatures, produced from Carbon Disulphide Vapour by the Action of the Silent Electric Discharge.—II, 574.
- Donnan (F. G.) and Barker (J. T.) An Experimental Investigation of Gibbs' Thermodynamical Theory of Interfacial Concentration in the Case of an Air-Water Interface, 557.
- Dynamical molecular systems emitting spectra of banded type (Whittaker), 262.
- Eccles (W. H.) and Airey (H. M.) Note on the Electrical Waves occurring in Nature, 145.
- Electric discharge in electrolytic gas, theory of chemical action of (Kirkby), 151.
- Electrical resistance, heating effect of currents in precise measurements of (Glazebrook, Bousfield, and Smith), 541.
- Electrical waves occurring in nature (Eccles and Airey), 145.
- Electron, path of, in combined magnetic and electric fields (Allen), 257.
- Emissivity of wire in cold liquid, relation to radius of wire (Bousfield), 552.
- Eustice (J.) Experiments on Stream-line Motion in Curved Pipes, 119.
- Explosions of coal-gas and air, radiation in (David), 537.
- Flame from nitrogen-burning arc (Strutt), 533.
- Fluids, mechanical viscosity of (Stanton), 366.
- Fourier constants of a function (Young), 14; — series, application of parametric integrals to the theory of (Young), 401; — a mode of generating (Young), 415.
- Fowler (A.) and Strutt (Hon. R. J.) Spectroscopic Investigations in connection with the Active Modification of Nitrogen. I.—Spectrum of the Afterglow, 377.
- $\gamma$ -rays, secondary, produced by  $\beta$ -rays (Gray), 131.
- Geological time, application of lead-uranium association to measurement of (Holmes), 248.
- Glazebrook (R. T.), Bousfield (W. R.), and Smith (F. E.) The Heating Effect of the Currents in Precise Measurements of Electrical Resistance, 541.
- Gray (J. A.) Secondary  $\gamma$ -rays produced by  $\beta$ -rays, 131.
- Haines (W. B.) The Effect of Temperature upon the Ductility of Zinc, 526.
- Hartley (W. N.) On some Mineral Constituents of a Dusty Atmosphere, 271.
- Hatfield (W. H.) The Chemical Physics involved in the Precipitation of Free Carbon from the Alloys of the Iron-carbon System, 1.
- Helium, production of, by ionium (Boltwood), 77.
- Holmes (A.) The Association of Lead with Uranium in Rock-minerals, and its Application to the Measurement of Geological Time, 248.
- Horton (F.) The Vacuum Tube Spectra of Mercury, 288.
- Houstoun (R. A.) On the Absolute Measurement of Light: a Proposal for an Ultimate Light Standard, 275.
- Interfacial concentration, investigation of Gibbs' thermo-dynamical theory of, for air-water interface (Donnan and Barker), 557.
- Ionic solubility-product (Kendall), 200.
- Ionisation of air over ocean (Simpson and Wright), 175; — of heavy gases by X-rays (Beatty), 230; — variation of, with velocity for the  $\beta$ -particles (Wilson), 240.
- Ionising particles, method of making visible paths of, through a gas (Wilson), 285.
- Ionium and actinium, separation from residues, and on production of helium by ionium (Boltwood), 77.
- Ions in gases, charges on, and motion of negative ions (Townsend), 25.
- Iridescent colours of birds and insects (Mallock), 598.
- Iron-carbon alloys, chemical physics of carbon precipitation from (Hatfield), 1.

Jones (H. O.) See Dewar and Jones.

Kaye (G. W. C.) A Silica Standard of Length, 430.

Kendall (J.) On the Ionic Solubility-Product, 200.

Kirkby (P. J.) A Theory of the Chemical Action of the Electric Discharge in Electrolytic Gas, 151.

Kohlrausch (F. W.) Obituary notice of, xi.

Light, absolute measurement of, and ultimate light standard (Houstoun), 275.

Light waves, longitudinal material waves accompanying (Poynting), 474.

Liquids, compression of, at high pressures (Parsons and Cook), 332.

Lithium and cesium, absorption spectra of (Bevan), 54.

MacMahon (P. A.) Memoir on the Theory of the Partitions of Numbers. Part V.—Partitions in 2-dimensional Space, 304.

Magnetic storms, origin of (Schuster), 44.

Mallock (H. R. A.) Pendulum Clocks and their Errors, 505 ; — Note on the Iridescent Colours of Birds and Insects, 598.

Mercury, vacuum-tube spectra of (Wilson), 288.

Nitrogen, chemically active modification of (Strutt), 219 ; — spectroscopy of (Fowler and Strutt), 377 ; — and sulphur, relative atomic weights of (Burt and Usher), 82 ; — burning arc, the flame arising from the (Strutt), 533.

Niven (C.) On the Measurement of Specific Inductive Capacity, 139.

Numbers, theory of partitions of. Part V (MacMahon), 304.

Obituary Notices of Fellows deceased :—

Ayrton (W. E.), i.

Kohlrausch (F. W.), xi.

Stoney (B. B.), viii.

Todd (Sir C.), xiii.

Williams (C. H. G.), xvii.

Optical system, pupil of, with regard to perspective (Beck), 462.

Oxygen, solid, produced by evaporation of liquid (Dewar), 589.

Parametric integrals, on a class of, and their application to Fourier series (Young), 401.

Parsons (Hon. C. A.) and Cook (S. S.) Experiments on the Compression of Liquids at High Pressures, 332.

Pendulum clocks and their errors (Mallock), 505.

Porter (H. L.) See Bragg and Porter.

Poynting (J. H.) On Small Longitudinal Material Waves accompanying Light Waves, 474.

Rayleigh (Lord) On Dr. Johnstone Stoney's Logarithmic Law of Atomic Weights, 471.

Röntgen radiation, energy and distribution of scattered (Crowther), 29 ; — production and properties of (Whiddington), 99 ; — production of characteristic (Whiddington), 323.

Rosenhain (W.) and Archbutt (S. L.) The Constitution of the Alloys of Aluminium and Zinc, 389.

Schuster (A.) The Origin of Magnetic Storms, 44 ; — On the Periodicity of Sun-spots, 50 ; — The Influence of Planets on the Formation of Sun-spots, 309.

Silica standard of length (Kaye), 430.

- Simpson (G. C.) and Wright (C. S.) Atmospheric Electricity over the Ocean, 175.
- Slide in right six-face under pure shear, distribution of (Andrade), 448.
- Smith (F. E.) See Glazebrook (R. T.), Bousfield (W. R.), and Smith (F. E.).
- Specific inductive capacity, measurement of (Niven), 139.
- Spectra, anode and cathode, of gases and vapours (Stead), 393; — of banded type, dynamics of molecular systems emitting (Whittaker), 262.
- Stanton (T. E.) The Mechanical Viscosity of Fluids, 366.
- Stead (G.) On the Anode and Cathode Spectra of various Gases and Vapours, 393.
- Stoney (B. B.) Obituary notice of, viii.
- Stoney's logarithmic law of atomic weights (Rayleigh), 471.
- Stream-line motion in curved pipes (Eastice), 119.
- Strutt (Hon. R. J.) A Chemically Active Modification of Nitrogen, produced by the Electric Discharge (Bakerian Lecture), 219; — The Flame arising from the Nitrogen-burning Arc, 533. See also Fowler and Strutt.
- Sun-spots, influence of planets on formation of (Schuster), 309; — periodicity of (Schuster), 50.
- Todd (Sir C.) Obituary notice of, xiii.
- Townsend (J. S.) The Charges on Ions in Gases, and some Effects that influence the Motion of Negative Ions, 25.
- Uranium-lead association in rock-minerals, application to measurement of geological time (Holmes), 248.
- Usher (F. L.) See Burt and Usher.
- Vapour pressures, optical method of measuring (Cuthbertson), 306.
- Water, boiling point of (Berkeley and Appleby), 477; — specific heat of (Bousfield), 302.
- Whiddington (R.) The Production and Properties of Soft Röntgen Radiation, 99; — The Production of Characteristic Röntgen Radiations, 323.
- Whittaker (E. T.) On the Dynamical Nature of the Molecular Systems which emit Spectra of the Banded Type, 262.
- Williams (C. H. Greville) Obituary notice of, xvii.
- Wilson (C. T. R.) On a Method of making Visible the Paths of Ionising Particles through a Gas, 285.
- Wilson (W.) The Variation of Ionisation with Velocity for the  $\beta$ -particles, 240.
- X-rays, energy transformations of (Bragg and Porter), 349.
- Young (W. H.) On the Fourier Constants of a Function, 14; — On a Class of Parametric Integrals and their Application in the Theory of Fourier Series, 401; — On a Mode of Generating Fourier Series, 415.
- Zinc, effect of temperature on ductility of (Haines), 526.

END OF THE EIGHTY-FIFTH VOLUME (SERIES A).