

INDEX TO VOLUME 185 (A)

- Absorption spectra of hexatriene and divinyl acetylenes in the vacuum ultra-violet (Walsh & Price), 182.
- Absorption spectrum of acetaldehyde in the vacuum ultra-violet (Walsh), 176.
- Air, a micro-analysis of the helium and neon contents of (Gluckauf), 98.
- Alexander, A. E. & Trim, A. R. The biological activity of phenolic compounds. Part 1. The effect of surface active substances upon the penetration of hexyl resorcinol into *Ascaris lumbricoides* var. *suis*, 351.
- Anderson, J. S. The conditions of equilibrium of 'non-stoichiometric' chemical compounds, 69.
- Anniversary address (Dale), 127.
- Bakerian Lecture. Meteorology of the lower stratosphere (Dobson, Brewer & Cwilog), 144.
- Bhabha, H. J. & Harish-Chandra. On the fields of motion of point particles, 250.
- Biological activity of phenolic compounds. Part 1. The effect of surface active substances upon the penetration of hexyl resorcinol into *Ascaris lumbricoides* var. *suis* (abstract) (Alexander & Trim), 351.
- Bi-variate partial fractions and their applications to flutter and stability problems (Frazer), 465
- Brewer, A. W. See Dobson, Brewer & Cwilog.
- Chang, T. S. Quantum electrodynamics with $\partial A_\mu / \partial x_\mu = 0$, 192.
- Conditions of equilibrium of 'non-stoichiometric' chemical compounds (Anderson), 69.
- Cwilog, B. M. See Dobson, Brewer & Cwilog.
- Dale, Sir Henry, Anniversary address, 127.
- Daunt, J. G. & Mendelssohn, K. An experiment on the mechanism of super-conductivity, 225.
- Dielectric properties of dipolar solids (Fröhlich), 399.
- Dissociation constants of the carboxyl and hydroxyl groups in some insoluble and sol-forming polysaccharides (Saric & Schofield), 431.
- Dobson, G. M. B., Brewer, A. W. & Cwilog, B. M. Bakerian lecture. Meteorology of the lower stratosphere, 144.
- Equations of motion of point particles (Harish-Chandra), 269.
- Experiment on the mechanism of super-conductivity (Daunt & Mendelssohn), 225.
- Field theories of the electron and the positron and of the meson (Flint), 14.
- Fields of motion of point particles (Bhabha & Harish-Chandra), 250.
- Flint, H. T. A study of the nature of the field theories of the electron and positron and of the meson, 14.
- Frazer, R. A. Bi-variate partial fractions and their applications to flutter and stability problems, 465.
- Fröhlich, H. Dielectric properties of dipolar solids, 399.
- Fröhlich, H. & Sack, R. Theory of the rheological properties of dispersions, 415.

- George, P. The oxidation of liquid hydrocarbons. Part III. The oxidation of tetralin in the presence of benzoyl peroxide as a free radical chain reaction, 337.
- George, P., Rideal, E. K. & Robertson, A. The oxidation of liquid hydrocarbons. Part I. The chain formation of hydroperoxides and their decomposition, 288.
- George, P. & Robertson, A. The oxidation of liquid hydrocarbons. Part II. The energy-chain mechanism for the thermal oxidation of tetralin, 309.
- Gluckauf, E. A micro-analysis of the helium and neon contents of air, 98.
- Gluckauf, E. & Paneth, F. A. The helium content of atmospheric air, 89.
- Halogenobenzenes, the structure and reactivity of the (Kenner), 119.
- Hardy, G. H. & Rogosinski, W. W. Theorems concerning functions subharmonic in a strip, 1.
- Harish-Chandra. On the equations of motion of point particles, 269.
- Harish-Chandra. *See* Bhabha, & Harish-Chandra.
- Helium content of atmospheric air (Gluckauf & Paneth), 89.
- Hinshelwood, C. N. *See* Willbourn & Hinshelwood.
- Holgate, S. The transverse flexure of perforated anisotropic plates, 50.
- Holgate, S. The transverse flexure of perforated isotropic plates, 35.
- Horton, T. & Millest, D. M. The ionization of helium by neutral helium atoms, 381.
- Hydrogen-oxygen reaction, mechanism. I. The third explosion limit (Willbourn & Hinshelwood), 353.
- Hydrogen-oxygen reaction, mechanism. II. The reaction occurring between the second and third explosion limits (Willbourn & Hinshelwood), 369.
- Hydrogen-oxygen reaction, mechanism. III. The influence of salts (Willbourn & Hinshelwood), 376.
- Ionization of helium by neutral helium atoms (Horton & Millest), 381.
- Kenner, G. W. The structure and reactivity of the halogenobenzenes, 119.
- Mackenzie, R. C. & Ritchie, M. The thermal decomposition of hydrogen peroxide vapour, 207.
- Matthews, B. H. C. A new instrument for solving spherical triangles, 241.
- Mendelssohn, K. *See* Daunt & Mendelssohn.
- Meteorology of the lower stratosphere. Bakerian lecture (Dobson, Brewer & Cwilong), 144.
- Micro-analysis of the helium and neon contents of air (Gluckauf), 98.
- Millest, D. M. *See* Horton & Millest.
- New instrument for solving spherical triangles (Matthews), 99.
- Oxidation of liquid hydrocarbons. Part I. The chain formation of hydroperoxides and their decomposition (George, Rideal & Robertson), 288.
- Oxidation of liquid hydrocarbons. Part II. The energy-chain mechanism for the thermal oxidation of tetralin (George & Robertson), 309.
- Oxidation of liquid hydrocarbons. Part III. The oxidation of tetralin in the presence of benzoyl peroxide as a free radical chain reaction (George), 337.
- Paneth, F. A. *See* Gluckauf & Paneth.
- Price, W. C. *See* Walsh & Price.
- Quantum electrodynamics with $\partial A_\mu / \partial x_\mu = 0$ (Chang), 192.

- Rheological properties of dispersions, Theory (Fröhlich & Sack), 415.
- Rideal, E. K. *See* George, Rideal & Robertson.
- Ritchie, M. *See* Mackenzie & Ritchie.
- Rogosinski, W. W. *See* Hardy & Rogosinski.
- Robertson, A. *See* George, Rideal & Robertson.
- Robertson, A. *See* George & Robertson.
- Sack, R. *See* Fröhlich & Sack.
- Saric, S. P. & Schofield, R. K. The dissociation constants of the carboxyl and hydroxyl groups in some insoluble and sol-forming polysaccharides, 431.
- Schofield, R. K. *See* Saric & Schofield.
- Spherical triangles, a new instrument for solving (Matthews), 241.
- Structure and reactivity of the halogenobenzenes (Kenner), 119.
- Structure and thermal properties of crystals. VI. The role of hydrogen bonds in Rochelle salt (Ubbelohde & Woodward), 448.
- Study of the nature of the field theories of the electron and the positron and of the meson (Flint), 14.
- Super-conductivity, an experiment on the mechanism of (Daunt & Mendelssohn), 225.
- Theorems concerning functions subharmonic in a strip (Hardy & Rogosinski), 1.
- Thermal decomposition of hydrogen peroxide vapour (Mackenzie & Ritchie), 207.
- Transverse flexure of perforated aeolotropic plates (Holgate), 50.
- Transverse flexure of perforated isotropic plates (Holgate), 35.
- Trim, A. R. *See* Alexander & Trim.
- Ubbelohde, A. R. & Woodward, I. Structure and thermal properties of crystals. VI. The role of hydrogen bonds in Rochelle salt, 448.
- Walsh, A. D. & Price, W. C. The absorption spectra of hexatriene and divinyl acetylenes in the vacuum ultra-violet, 182.
- Walsh, A. D. The absorption spectrum of acetaldehyde in the vacuum ultra-violet, 176.
- Willbourn, A. H. & Hinshelwood, C. N. The mechanism of the hydrogen-oxygen reaction. I. The third explosion limit, 353.
- Willbourn, A. H. & Hinshelwood, C. N. The mechanism of the hydrogen-oxygen reaction. II. The reaction occurring between the second and third explosion limits, 369.
- Willbourn, A. H. & Hinshelwood, C. N. The mechanism of the hydrogen-oxygen reaction. III. The influence of salts, 376.
- Woodward, I. *See* Ubbelohde & Woodward.

PROCEEDINGS
OF THE
ROYAL SOCIETY OF LONDON

SERIES A. MATHEMATICAL AND PHYSICAL SCIENCES

VOL 185

Published by the Royal Society
Burlington House
Piccadilly
London, W.1

FIRST PRINTED IN GREAT BRITAIN FOR THE ROYAL SOCIETY AT THE
UNIVERSITY PRESS, CAMBRIDGE

REPRINTED IN GREAT BRITAIN BY OFFSET-LITHO BY BUTLER & TANNER LTD.,
FROME AND LONDON (1959)

CONTENTS

SERIES A VOLUME 185

No. A 1000. 10 January 1946

	PAGE
Theorems concerning functions subharmonic in a strip. By G. H. Hardy, F.R.S., and W. W. Rogosinski	1
A study of the nature of the field theories of the electron and positron and of the meson. By H. T. Flint	14
The transverse flexure of perforated isotropic plates. By S. Holgate	35
The transverse flexure of perforated aeolotropic plates. By S. Holgate	50
The conditions of equilibrium of 'non-stoichiometric' chemical compounds. By J. S. Anderson	69
The helium content of atmospheric air. By E. Glückauf and F. A. Paneth	89
A micro-analysis of the helium and neon contents of air. By E. Glückauf	98
The structure and reactivity of the halogenobenzenes. By G. W. Kenner	119

No. A 1001. 12 February 1946

Anniversary Address by Sir Henry Dale, O.M., G.B.E.	127
Bakerian Lecture. Meteorology of the lower stratosphere. By G. M. B. Dobson, F.R.S. with A. W. Brewer and B. M. Cwilong	144
The absorption spectrum of acetaldehyde in the vacuum ultra-violet. By A. D. Walsh. (Plate 1)	176
The absorption spectra of hexatriene and divinyl acetylene in the vacuum ultra-violet. By W. C. Price and A. D. Walsh. (Plate 2)	182
Quantum electrodynamics with $\partial A_\mu / \partial x_\mu = 0$. By T. S. Chang	192
The thermal decomposition of hydrogen peroxide vapour. By Robert C. Mackenzie and Mowbray Ritchie	207
An experiment on the mechanism of superconductivity. By J. G. Daunt and K. Mendelssohn	225

No. A 1002. 14 March 1946

	PAGE
A new instrument for solving spherical triangles. By Bryan H. C. Matthews, F.R.S. (Plate 3)	241
On the fields and equations of motion of point particles. By H. J. Bhabha, F.R.S. and Harish-Chandra	250
On the equations of motion of point particles. By Harish-Chandra	269
The oxidation of liquid hydrocarbons. I. The chain formation of hydroperoxides and their decomposition. By Philip George, E. K. Rideal, F.R.S. and Alan Robertson	288
The oxidation of liquid hydrocarbons. II. The energy-chain mechanism for the thermal oxidation of tetralin. By Philip George and Alan Robertson	309
The oxidation of liquid hydrocarbons. III. The oxidation of tetralin in the presence of benzoyl peroxide as a free radical chain reaction. By Philip George	337
The effect of surface-active substances on the penetration of hexyl resorcinol into <i>Ascaris lumbricoides</i> var. <i>suis</i> . (Abstract.) By A. E. Alexander and A. R. Trim	351

No. A 1003. 5 April 1946

The mechanism of the hydrogen-oxygen reaction. I. The third explosion limit. By A. H. Willbourn and C. N. Hinshelwood, F.R.S.	353
The mechanism of the hydrogen-oxygen reaction. II. The reaction occurring between the second and third explosion limits. By A. H. Willbourn and C. N. Hinshelwood, F.R.S.	369
The mechanism of the hydrogen-oxygen reaction. III. The influence of salts. By A. H. Willbourn and C. N. Hinshelwood, F.R.S.	376
The ionization of helium by neutral helium atoms. By Frank Horton, F.R.S. and Dorothy M. Millest	381
Dielectric properties of dipolar solids. By H. Fröhlich	399
Theory of the rheological properties of dispersions. By H. Fröhlich and R. Sack.	415
The dissociation constants of the carboxyl and hydroxyl groups in some insoluble and sol-forming polysaccharides. By S. P. Saric and R. K. Schofield	431
Structure and thermal properties of crystals. VI. The role of hydrogen bonds in Rochelle salt. By A. R. Ubbelohde and I. Woodward. (Plate 4)	448
Bi-variate partial fractions and their applications to flutter and stability problems. By R. A. Frazer	465
Index	485

CONTENTS

	PAGE
The mechanism of the hydrogen-oxygen reaction. I. The third explosion limit. By A. H. WILLBOURN and C. N. HINSHELWOOD, F.R.S.	353
The mechanism of the hydrogen-oxygen reaction. II. The reaction occurring between the second and third explosion limits. By A. H. WILLBOURN and C. N. HINSHELWOOD, F.R.S.	369
The mechanism of the hydrogen-oxygen reaction. III. The influence of salts. By A. H. WILLBOURN and C. N. HINSHELWOOD, F.R.S.	376
The ionization of helium by neutral helium atoms. By FRANK HORTON, F.R.S. and DOROTHY M. MILLEST	381
Dielectric properties of dipolar solids. By H. FRÖHLICH	399
Theory of the rheological properties of dispersions. By H. FRÖHLICH and R. SACK	415
The dissociation constants of the carboxyl and hydroxyl groups in some insoluble and sol-forming polysaccharides. By S. P. SARIC and R. K. SCHOFIELD	431
Structure and thermal properties of crystals. VI. The role of hydrogen bonds in Rochelle salt. By A. R. UBBELOHDE and I. WOODWARD. (Plate 4)	448
Bi-variate partial fractions and their applications to flutter and stability problems. By R. A. FRAZER	465
Index	485

FIRST PRINTED IN GREAT BRITAIN FOR THE ROYAL SOCIETY AT THE
UNIVERSITY PRESS, CAMBRIDGE

REPRINTED IN GREAT BRITAIN BY OFFSET-LITHO BY BUTLER & TANNER LTD.,
FROME AND LONDON (1959)