

PAGES MISSING 1 TO 16

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, February 4th, 1937, at 5 p.m., Professor N. V. SIDGWICK, C.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society through the deaths of the following Fellows :

	Elected.	Died.
Frederick Bradshaw	1923	29th December, 1935.
Herbert John Hodges	1884	14th January, 1937.
Percy Richard Sanders	1904	18th January, 1937.
David Sommerville	1906	30th January, 1937.

The PRESIDENT announced that he had conveyed the hearty congratulations of the Society to the following Fellows whose names appeared in the List of New Year Honours :

Sir Harry McGowan, K.B.E., LL.D.	Baron.
Henry Thomas Tizard, C.B., A.F.C., F.R.S.	Knight Commander of the Bath.
William Fraser Donald	Member of the Order of the British Empire.

The following were formally admitted Fellows of the Chemical Society : Hugh D. Anderson, E. C. Baughan, R. C. Amsden, Miss Daphne A. Stephan, E. J. Buckler, A. E. Alexander, H. L. Lehmann, J. Hale, Roy R. Gordon, and Michael Polanyi.

Forms of Recommendation for Fellowship were read for the first time in favour of :

George Bernard Beaman, B.Sc., 27, Peel Street, Barnsley.
 Albert Victor Brancker, B.Sc., Caroni, Ableton Road, Pilning, Bristol.
 Joseph Chatt, Emmanuel College, Cambridge.
 George Honor Clement, A.I.C., 19, Royal Crescent, Holland Park, W. 11.
 Joseph Lewis Edgar, B.Sc., A.R.C.S., 47, Telford Avenue, Streatham, S.W. 2.
 John Tyson Tyson, A.R.C.S., 10, Hurlingham Court, Fulham, S.W. 6.
 Charles Henry Vasey, Lincoln College, Oxford.
 Theodore White, B.Sc., Edward Davies Chemical Laboratories, Aberystwyth.

and for the second time in favour of 23 candidates.

A discussion on " The transition state in reaction kinetics " was opened by Professor M. Polanyi, and continued by Professor C. N. Hinshelwood, Mr. M. G. Evans, Dr. W. F. K. Wynne-Jones, Professor F. G. Donnan, Dr. J. Weiss, Dr. N. K. Adam, and Professor R. G. W. Norrish. Professor Polanyi and Professor Hinshelwood replied. At the conclusion of the meeting, the President expressed thanks to those who had taken part in the discussion.

Ordinary Scientific Meeting, Thursday, February 18th, 1937, at 8 p.m., Professor N. V. SIDGWICK, C.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death of the following Fellows :

	Elected.	Died.
Charles H. Martin	1897	23rd May, 1936.
Robert Frost	1890	21st April, 1936.

It was announced :

1. That Professor F. G. Donnan had been appointed by the Council as the Society's representative on the Chemical Council in place of Professor N. V. Sidgwick, President, who had retired.

2. That the congratulations of the Society had been conveyed to Mr. Arthur Pearson Luff, who completed 60 years of Fellowship on the 15th February, 1937.

3. That detailed arrangements for the Anniversary Meetings had now been made, particulars of which are given on page 24.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Herbert Renshaw Clarke, 26, Manton Road, Abbey Wood, S.E. 2.
 William John Howells, M.Sc., Tydfil House, The Parade, Porth, Glam.
 Eileen Constance Jordan, 25, Culverhouse Road, Luton, Beds.
 Assur Giessing Oppegaard, Dipl.Ing., 26, West Avenue, Billingham, Co. Durham.
 Anthony Warren Riley, 59, Maida Vale, W. 9.
 Harry James Eric Smith, 4, Huguenot Place, Wandsworth Common, S.W. 18.

and also of the following, whose applications have been accepted by the Council under Bye-Law I (2) :

William Alfred La Lande, jun., Assistant Prof., M.S., Ph.D., 3309, Baring Street, Philadelphia, Pa., U.S.A.
 Soli Desabhai Sunawala, M.Sc., Industrial Research Bureau, New Delhi, India.
 Jerzy Suszko, Prof., ul. Grunwaldzka 14, Poznan, Poland.

Forms of Recommendation for Fellowship were read for the second time in favour of 8 candidates, and for the third time in favour of 89 candidates.

Dr. J. N. Sugden and Dr. L. A. Sayce were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected as Fellows :

Edward Penley Abraham, B.A.	Winifred Hollis.
Ali Ahmad, M.Sc.	Edwin Austin Hutton.
Joseph Allen, B.A.	George Cashmore Israel, M.Sc.
Noel Lionel Allport, F.I.C.	Harold Jackson, M.Sc.
Michael David Lester Mitchell Alton, B.Sc.	Margaret Manderson Jamison, B.Sc.
Herbert Harding Armstrong.	George Alan Jeffrey, B.Sc.
John Arnold.	John Cowdery Kendrew.
Thomas Backhouse, B.Sc.	Bernard Ashford Kilby.
Ian Mackenzie Barclay, B.Sc.	Earl Judson King, M.A., Ph.D.
Stuart Jeffery Bates, Prof., M.A., Ph.D.	Leonard Esmond King, B.Sc.
Franz Bergel, Dr. phil. nat.	Meyrick Vincent Bryan King, M.Sc.
Arthur Pickup Best, B.Sc.	Jack Lawrence, B.Sc.
Andrew Bowman, B.A.	William Douglas McFarlane, Prof., M.A., Ph.D.
Cedric John Brown, B.Sc.	Basil Joseph MacNulty, B.Sc.
Eric Collins Butterworth, M.Sc.	Alfred Gavin Maddock.
Wilfred James Clifford, B.Sc.	George Johnstone Murdoch, Ph.D.
Joseph Michael Connolly, Ph.D., A.I.C.	William Edgar Nelson, B.Sc.
Bryan Robert Cookson, B.Sc.	Arthur Stanley Nickelson, B.Sc., A.I.C.
Denys Irvine Coomber, B.Sc.	Harold Kingsley Packer.
Herbert Neville Dale, B.Pharm.	Bertram Samuel Page, M.A.
James Norman Davidson, B.Sc.	Alexis Laird Parker, B.Sc.
Evan David Leonard Davies.	George Alwyn Parry, M.Sc.
Vsevolod de Gaouck.	John Donaldson Pearson, B.Sc.
Ronald Henry Del Mar, B.A.	George Potticary Pollard, M.A.
John Edmund Driver, M.Sc., Ph.D.	David Edgar Price, B.Sc.
Gordon Henry Elliott, B.Sc., A.R.C.S.	Claude Austin Puddy, Ph.D., B.Sc.Agric.
Donald Faulkner.	Henry Coverdale Raine.
Joseph Robert Files, B.Sc., A.I.C.	George Alston Rowe, B.Sc., A.R.C.S.
Stanley Fordham, Ph.D., A.R.C.S.	Paul Russell, B.Sc.
Eric Granville Blair Giles, A.R.C.S.	Geert Werner Salomon, Dr. Ing.
Robert Oswald Hall, Ph.D.	Leonard Saunders, B.Sc.
Louis Plack Hammett, Prof., A.B., Ph.D.	Robert Vincent Seddon, Ph.D.
Frank Witcomb Harris.	Kenneth Strang Sharples.
Frank Hartley, B.Sc.	Walter Henry Clive Simmonds.

Norman Thomas Simmons.	Nazeer Ahmed Taher, M.Sc.
Edward Archibald Smith.	James Stewart Tapp, M.A., Ph.D.
Fred Smith, Ph.D.	Catherine Hannah Tinker, B.Sc.
William Henry Smith.	Ronald Philip Towndrow, B.Sc.
William Allan Southern.	Richard Aubrey Wallace.
Arthur Stoll, Prof., Dr. rer. nat., Dr. med. h.c.	Arthur Leonard Walpole, A.R.C.S.
Leonard Frederick Story, B.Sc.	Kenneth Richard Webb, B.Sc.
Harry Prentice Stout, B.A.	James Chippindale Welch, B.Sc.
Harry Stromberg, M.Sc.Tech.	James William Woolcock, B.A., B.Sc., Dr. phil. nat.
Gordon Brims Black McIvor Sutherland, M.A., B.Sc., Ph.D.	Geoffrey Tyndale Young, B.Sc.
David Tabor, B.Sc. A.R.C.S.	

The following papers were read :

- “ On chlorine hexoxide.” By C. F. GOODEVE and F. D. RICHARDSON.
 “ The photo-decomposition of gaseous acetone.” By R. SPENCE and W. WILD.
 “ The kinetics of the reaction between oxygen and sulphur. Part II. The fringescent
 oxidation of sulphur.” By L. A. SAYCE.

MEETINGS OUTSIDE LONDON.

A meeting under the auspices of the Society was held in the Chemistry Theatre of the University of Liverpool on Friday, January 29th, 1937, at 6 p.m., when Professor J. L. Simonsen, F.R.S., delivered a lecture on “ Sesquiterpene Ketones, their Structure and Synthesis.” The lecture was greatly appreciated and a vote of thanks proposed by Professor T. P. Hilditch and seconded by Dr. F. W. Kay was carried with acclamation. Professor A. Robertson presided.

A meeting of the Society was held jointly with the University College of Swansea Chemical Society at 6 p.m. on Friday, January 29th, 1937, in the Chemistry Lecture Theatre of the University College of Swansea. The Chair was taken by Mr. P. G. Morris, B.Sc. Dr. William Wardlaw delivered a lecture on “ Recent Progress in Inorganic Chemistry.” A joint discussion followed in which Mr. J. R. Green and Professor J. E. Coates took part. A vote of thanks to the Lecturer was proposed by Dr. N. H. Hartshorne and seconded by Mr. R. Richards.

BRITISH STANDARDS INSTITUTION.

It has been proposed that British Standards Specification No. 616 Sampling of Coal Tar and its Products, issued in July 1930, shall be reviewed so as to ascertain whether any amendments are desirable. Comments, or suggestions for amendment of the specification should reach the British Standards Institution at 28, Victoria Street, S.W. 1 not later than the 30th March.

List of papers, or abstracts thereof, received between January 21st and February 18th, 1937. (This List does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- “ Anisoxide. Part I.” By R. W. JACKSON and W. F. SHORT.
 “ The polarity of the co-ordinate link. Part II. The influence of aromatic substitution on the stability of the phosphinimines.” By F. G. MANN and E. J. CHAPLIN.
 “ The exchange of sulphonyl groups.” By D. T. GIBSON and J. D. LOUDON.
 “ The structure of the glutaconic acids and esters. Part IX. α -Methyl- and α -ethyl-glutaconic acids.” By J. S. FITZGERALD and G. A. R. KON.
 “ The chemistry of totarol. Part I.” By W. F. SHORT and H. STROMBERG.

- "Thiazole and thiadiazine formation from thiosemicarbazones." By J. McLEAN and F. J. WILSON.
- "Acid salts of monobasic organic acids. Part III." By J. D. M. ROSS, T. J. MORRISON, and C. JOHNSTONE.
- "Salt hydrates and deuterates. Part I. The dissociation pressures of certain deuterates." By J. BELL.
- "Combination of fatty acids with nitrogen bases. Part III. Piperidine and lower fatty acids: molecular weight, surface tensions, viscosities, and conductivities in benzene." By E. B. R. PRIDEAUX and R. N. COLEMAN.
- "The structure of semipermeable membranes of inorganic salts." By S. FORDHAM and J. T. TYSON.
- "Some pinacols derived from *o*-hydroxyacetophenones." By W. BAKER and J. C. MCGOWAN.
- "The conductivity of potassium chloride solutions." By C. W. DAVIES.
- "The constitution of sulphocamphylic acid." By J. R. LEWIS and J. L. SIMONSEN.
- "Some electrostatic factors which can operate in polar reactions. Part II. Bimolecular reactions." By W. A. WATERS.
- "On the interactions of cobalt chloride and ethylenediamine." By H. D. K. DREW and N. H. PRATT.
- "The absorption spectra of some tautomeric selenazole derivatives." By A. A. FIRDAUS and R. F. HUNTER.
- "The association of α -piperidone." By G. I. JENKINS and T. W. J. TAYLOR.
- "Aneurin. Part VII. A synthesis of aneurin." By A. R. TODD and F. BERGEL.
- "The formation and decomposition of quaternary ammonium salts in solution." By W. C. DAVIES and R. G. COX.
- "The absorption spectrum of potassium cobaltous thiocyanate." By O. R. HOWELL and A. JACKSON.
- "Some aryl derivatives of pyrimidines, quinoxalines, and quinolines." By (Miss) D. LOCKHART and E. E. TURNER.
- "Free radicals and atoms in primary photochemical processes. The dissociation of aliphatic ketones: the acetyl radical." By H. H. GLAZEBROOK and T. G. PEARSON.
- "Polysaccharides. Part XXIII. Determination of the chain length of glycogen." By W. N. HAWORTH, E. L. HIRST, and F. A. ISHERWOOD.
- "The transition state in chemical reactions." By M. POLANYI.
- "Oxidation products of benzanthrone-8-carboxylic acid." By J. L. GRIEVE and H. G. RULE.
- "Sumatrol. Part I." By A. ROBERTSON and G. L. RUSBY.
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ADDITIONS TO THE LIBRARY.

I. Presented by the late Professor
T. M. Lowry.

BAYEN, [PIERRE], and CHARLARD, [LOUIS MARTIN]. Recherches chimiques sur l'étain, faites et publiées par ordre du gouvernement; ou réponse à cette question: Peut-on sans aucun danger employer les vaisseaux d'étain dans l'usage économique? Paris 1781. pp. viii + 285. (Reference.)

BERGMAN, [TORBERN OLOF]. Traité des affinités chimiques, ou attractions électives; traduit du Latin. Augmenté d'un supplément et de notes. Paris 1788. pp. [viii] + 444 + [ii] + 3 folding tables and 4 folding plates. (Reference.)

CHAPTAL, J[EAN] A[NTOINE] CLAUDE]. Elements of chemistry. Translated from the French. London 1791. pp. viii + lxviii + 295, xii + 488, viii + 408 + [v]. (Reference.)

DUMAS, [JEAN BAPTISTE.] Leçons sur la philosophie chimique professées au Collège de France [en 1836]. Collected by [AMAND] BINEAU. Paris [1837]. pp. [iv] + 430. (Reference.)

— Mémoire sur les équivalents des corps simples. [Extrait des *Ann. Chim. Phys.*, [iii], 55.] Paris 1859. pp. ii + 82. ill.

HALES, STEPHEN. Vegetable staticks: or, an account of some statical experiments on the sap in vegetables: being an essay towards a natural history of vegetation. Also, a specimen of an attempt to analyse the air, by a great variety of chymio-statical experiments; which were read at several meetings before the Royal Society. London 1727. pp. [vii] + ix + 376. ill. (Reference.)

LIEBIG, JUSTUS. Handbook of organic analysis. Edited by A. W. HOFMANN. London 1853. pp. viii + 136. ill. (Reference.)

— Principles of agricultural chemistry with special reference to the late researches made in England. London 1855. pp. viii + 136. (Reference.)

MARIOTTE, [EDMONDE]. Essais de physique ou memoires pour servir à la science des choses naturelles. [Containing:] Premier essay. De la vegetation des plantes. Paris 1679. pp. [iv] + 180. Second essay. De la nature de l'air. Paris 1679. pp. [iv] + 231. Troisième essay. Du chaud et du froid. Paris 1679. pp. [iv] + 72. (Reference.)

PECKSTON, T[HOMAS] S. The theory and practice of gas-lighting: in which is exhibited an historical sketch of the rise and progress of the science; and the theories of light, combustion, and formation of coal; with descriptions of the most approved apparatus for

generating, collecting, and distributing, coal-gas for illuminating purposes. London 1819. pp. xx + 438. ill. (Reference.)

SCHEELE, CARL WILHELM. Traité chimique de l'air et du feu. With an introduction by TORBERN BERGMANN. Translated from the German by BARON [PHILIPP FRIEDRICH] DIETRICH. Paris 1781. pp. xlv, 45 to 268. ill. (Reference.)

SOCIÉTÉ D'ARCUEIL. Mémoires de physique et de chimie. 3 vols. Paris 1807-17. (Reference.)

VOLTA, ALEXANDRE. Lettres sur l'air inflammable des marais. Translated from the Italian. Strasbourg 1778. pp. [vi] + 191. ill. (Reference.)

WENZEL, CARL FRIEDRICH. Lehre von der Verwandtschaft der Körper. [2nd edition.] Dresden 1782. pp. [iv] + 492. (Reference.)

II. Miscellaneous donations.

BRITISH PLASTICS YEAR BOOK 1937. London 1937. pp. 601. ill. (Reference.) 15s. net. From the Editor.

CHIKASHIGE, MASUMI. Alchemy and other achievements of the ancient Orient. The civilization of Japan and China in early times as seen from the chemical point of view. Tokyo 1936. pp. x + 102. ill. Yen 1.50. (Recd. 29/1/37.) From the Author.

FOWLES, GEORGE. Lecture experiments in chemistry. London 1937. pp. xvi + 564. ill. 16s. net. (Recd. 21/1/37.) From the Publishers: Messrs. G. Bell & Sons.

JOYCE, JEREMIAH. Dialogues in chemistry. 3rd edition. 2 vols. London 1816. pp. xiv + 360 + 4 plates, iv + 342 + 4 plates. (Reference.) From Mr. J. A. Pickard.

III. By purchase.

FRIEND, JOHN NEWTON, [Editor.] A text-book of inorganic chemistry. Vol. XI. Part 4. Derivatives of selenium, tellurium, chromium, and platinum. By ARCHIBALD EDWIN GODDARD. London 1937. pp. xxviii + 292. (Two copies.) 20s. net.

HANDBUCH DER ALLGEMEINEN CHEMIE. Vol. IX. Hydroxyde und Oxyhydrate. By R. FRICKE and G. F. HÜTTIG. Leipzig 1937. pp. xx + 641. ill. (Reference.) M. 60.

RAHN, OTTO. Invisible radiations of organisms. With an introduction to the physics of radiation by SIDNEY W. BARNES. Berlin 1936. pp. x + 215. ill. M. 13.20. (Recd. 18/1/37.)

VANINO, LUDWIG. Handbuch der präparativen Chemie. 3rd edition. Vol. II. Organischer Teil. Stuttgart 1937. pp. iv + 887. ill. M. 48. (Recd. 11/2/37.)

IV. Pamphlets.

AMMANN, HANS. Über die Reaktion von Bichromat mit Formiat im Licht. Borna-Leipzig 1936. pp. vi + 47. ill.

AUSTRALIA, COMMONWEALTH OF. *Council for Scientific and Industrial Research*. C.S.I.R. Ten years of progress 1926-1936. Melbourne 1936. pp. 67. ill.

BOMBAY PRESIDENCY. *Department of Industries*. Bulletin No. 10. Possibility of production of aluminium in Bombay. By M. S. PATEL. Bombay 1936. pp. iv + 27.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 718-1936. Density hydrometers. pp. 52. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Building Research*. Bulletin No. 15. Lightweight concrete aggregates. By F. M. LEA. London 1936. pp. iv + 13.

— *Forest Products Research*. A handbook of home-grown timbers. London 1936. pp. iv + 46.

— *Road Research*. Technical Paper No. 4. The control of the moisture content of aggregates for concrete, introducing a new vibration

method. By F. N. SPARKES. London 1936. pp. vi + 26. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Fuel Research*. Physical and chemical survey of the national coal resources, No. 36. The Northumberland and Durham coalfield. The Beaumont seam. Part i.—Northumberland area. London 1936. pp. vi + 68. ill.

FEDERATED MALAY STATES. *Institute for Medical Research*. Bulletin No. 1 of 1936. The carotene content of Malayan palm oil. By I. A. SIMPSON. Kuala Lumpur 1936. pp. 14. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Technical Publications. Series A. No. 49. Discoloration and corrosion in canned cream. By C. P. JACKSON, G. R. HOWAT, and T. P. HOAR. (From the *J. Dairy Research*, 1936, 7.)

LEAD INDUSTRIES DEVELOPMENT COUNCIL. Technical Publications. Bulletin No. 2. Lead: the material, its manufacture and properties. London [1937]. pp. ii + 19. ill.

UNITED STATES. *Department of Commerce*. National Bureau of Standards. Circular 411. Organic plastics. By GORDON M. KLINE. Washington 1936. pp. 27.

FORTHCOMING MEETINGS OUTSIDE LONDON.*EDINBURGH.*

Joint meeting with the local sections of the Institute of Chemistry and the Society of Chemical Industry. Lecture on "Some Fundamental Laws of Chemical Change," by Professor C. N. Hinshelwood, M.A., F.R.S., at the North British Station Hotel. This meeting will take place on Wednesday, March 17th, 1937, at 7.30 p.m., and not on March 19th as already announced.

LEEDS.

Thursday, April 29th, 1937, at 7 p.m. Meeting for the reading of papers in the Lecture Theatre of the new Chemistry Building of the University.

LIVERPOOL.

Monday, March 15th, 1937, at 6 p.m. Lecture on "Mechanisms of some Biological Oxidations," by Professor D. Keilin, M.A., Sc.D., F.R.S., in the Chemistry Lecture Theatre of the University.

MANCHESTER.

Thursday, March 11th, 1937, at 7 p.m. Meeting for the reading of original papers in the Chemistry Lecture Theatre of the University.

NEWCASTLE AND DURHAM.

Friday, April 23rd, 1937, at 7.30 p.m. Annual Dinner of the North East Coast Chemical and Allied Organisations at the Central Station Hotel.

Fellows are invited to attend the following Bedson Lecture to be held in the Chemistry Lecture Theatre, Armstrong College :

Friday, March 5th, 1937, at 6.30 p.m. Lecture on "The X-Ray Interpretation of Protein Structure," by Dr. W. T. Astbury.

NOTTINGHAM.

Friday, March 19th, 1937, at 7.30 p.m. Lecture on "The Biochemistry of the Waxes," by Professor A. C. Chibnall, M.A., D.Sc., in the Chemistry Theatre of the University College.

FORTHCOMING MEETINGS IN LONDON.

Thursday, March 4th, 1937, at 8 p.m.

Lecture entitled: "Some Problems of Tyrosine Metabolism," by Professor H. S. Raper, C.B.E., D.Sc., F.R.S.

Thursday, March 11th, 1937, at 8 p.m.

Ordinary Scientific Meeting.

PROGRAMME OF ANNIVERSARY MEETINGS.

March 17th—19th, 1937.

Wednesday, March 17th.

- At 2.30 p.m. Meeting of Local Representatives at Burlington House.
 At 5.30 p.m. The Seventh Hugo Müller Lecture, entitled "Principles of Distribution of Chemical Elements in Minerals and Rocks," will be given by Professor Dr. Victor M. Goldschmidt at the Royal Institution.
 At 7.45 for 8 p.m. Social Evening at the University of London, New Buildings.

Thursday, March 18th.

- Morning. Visit to the Research Laboratories of the Anglo-Iranian Oil Company, or to the Laboratories of the Imperial College.
 At 3.30 for 4 p.m. Ninety-Sixth Annual General Meeting at Burlington House.
 At about 4.20 p.m. Presidential Address, entitled "Hybrid Molecules," by Professor N. V. Sidgwick, C.B.E., F.R.S.
 At 7 for 7.30 p.m. Anniversary Dinner at Grosvenor House.

Friday, March 19th.

- Morning. Visit to the Mond Nickel Precious Metals Refinery, or to the Laboratories of University College, London.
 Afternoon. Visit to the Research Laboratories of Messrs. J. Lyons & Co., or to the Research Laboratories of the Gas Light & Coke Co. (Fulham).

Thursday, April 15th, 1937, at 8 p.m.

Joint discussion with the London Section of the Society of Chemical Industry on "Physico-Chemical Problems Involved in Distillation," to be opened by Professor J. Reilly, M.A., D.Sc.

Thursday, April 29th, 1937, at 8 p.m.

The Haber Memorial Lecture by Professor J. E. Coates, O.B.E., D.Sc.

SOCIETY OF PUBLIC ANALYSTS.

Fellows are cordially invited by the President and Council of the Society of Public Analysts to be present at an address to be given in the Meeting Room of the Chemical Society on the 5th March, 1937, at 6.15 p.m. by Professor G. Barger, M.A., D.Sc., F.R.S., on "The Alkaloids of Ergot."

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, March 4th, 1937, at 8 p.m., Professor N. V. SIDGWICK, C.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death on September 27th, 1935, of Alexander Howard Stewart, who was elected a Fellow of the Society in February of that year.

The following list of nominations for vacant places on the Council was read :—

President (one vacancy) :

*F. G. DONNAN.

Vice-Presidents, who have filled the office of President (two vacancies) :

*N. V. SIDGWICK.

*W. P. WYNNE.

Vice-Presidents, who have not filled the office of President (three vacancies) :

*G. BARGER.

* R. H. PICKARD.

*†J. C. PHILIP.

Honorary Secretaries (one vacancy) :

*C. W. DAVIES.

Ordinary Members of Council :

Town Members (*i.e.* those resident within a radius of 50 miles from Charing Cross)
(four vacancies) :

†H. V. A. BRISCOE.

*R. J. W. LE FÈVRE.

*F. P. DUNN.

*R. ROBISON.

†L. A. JORDAN.

†W. H. J. VERNON.

Country Members (*i.e.* those resident beyond a radius of 50 miles from Charing Cross)
(two vacancies) :

†J. W. BAKER.

†J. REILLY.

†F. B. KIPPING.

†E. H. RODD.

†E. B. MAXTED.

* Nominated by Council under Bye-Law VI.

† Nominated by Fellows under Bye-Law VI.

Forms of Recommendation for Fellowship were read for the first time in favour of :—

Frank Raymond Bradbury, B.Pharm., B.Sc., Ph.C., 32, Alderbrook Road, S.W. 12.

John Critchlow, B.Sc., 14, Sunnyfield Road, Heaton Mersey, Manchester.

Roderick Falconer, B.Sc., 45, High Street, Daventry, Northants.

Thomas William Gibling, B.Sc., B.A., 12, Clifton Place, Newton Bar, Wakefield.

Max Lamchen, M.Sc., 59, Nevern Square, Earl's Court, S.W. 5.

George Stanley Smith, B.Sc., A.I.C., 166, Wickham Chase, West Wickham.

and for the second time in favour of nine candidates.

Dr. H. J. Emeléus and Dr. W. H. Patterson were appointed Scrutators to assist in the counting of votes recorded for the election of Ordinary Members of Council (Town and Country).

The PRESIDENT then called on Professor H. S. Raper to deliver his lecture entitled : " Some Problems of Tyrosine Metabolism."

At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by Professor R. Robison and seconded by Dr. Paul Haas, was carried with acclamation.

Ordinary Scientific Meeting, Thursday, March 11th, 1937, at 8 p.m., Professor N. V. SIDGWICK, C.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death on February 13th, of Professor Edward Curtius Franklin, who was elected an Honorary Fellow of the Society in 1933, and stated that the Council had passed the following resolution :

" The President, Officers and Council of the Chemical Society have learned with profound regret of the death of Professor Edward Curtius Franklin, who was elected an Honorary Fellow of the Society on the 2nd November, 1933, and desire to express their deep sorrow at the loss of their distinguished colleague and to record their high appreciation of the services he has rendered to the Science of Chemistry."

Those present stood while the resolution was read.

It was announced :

1. That the following letter had been received from the Secretary of the Burlington House Committee appointed to make arrangements for the seating for the Coronation Procession :

*Geological Society of London,
Burlington House, W. 1.
March 10th, 1937.*

*The Secretary,
The Chemical Society,
Burlington House, W. 1.*

DEAR SIR,

The Committee appointed to make arrangements for viewing the Coronation Procession from Burlington House greatly regret that they have been obliged to abandon the projected scheme of stands along the front of that building. The plans for the proposed stands have been submitted to the appropriate Authorities, and while official replies have not yet been received, the Committee have been informed that there is no possibility of the approval of those Authorities being obtained. The objections raised by them are of such a nature that no alternative scheme is possible, and in these circumstances the Committee have no option but to abandon the proposals altogether. The Committee would be grateful if you would notify the Fellows of your Society accordingly.

The Committee have under consideration a scheme of decoration along the front of the building, particulars of which will be forwarded later.

Yours faithfully,
(signed) F. N. ASHCROFT,
Secretary, Coronation Committee,
Burlington House.

2. That the congratulations of the Society had been conveyed to Mr. Frank Watson Young, who completed 60 years of Fellowship on March 1st, 1937, and to the following who had completed 50 years of Fellowship on March 3rd, 1937 : Dr. Leonard Dobbin, Dr. G. McGowan, and Dr. G. T. Moody.

The following were formally admitted Fellows of the Society : F. W. Harris, Frank Hartley, and John Todd.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Charles Laurence Arcus, B.Sc., 152, Browning Road, Manor Park, E. 12.
 Arthur Michell Breach, Ashton House, The Mount, Frome, Somerset.
 Norman Cooper Brown, Elm House, Ampleforth, York.
 George Harry Dazeley, B.A., 10, Malcolm Street, Cambridge.
 Vladimir Dvorkovitz, B.Sc., 42, Rodney Court, Maida Vale, W. 9.
 Cyril John Williams Hooper, Ph.D., A.R.C.S., D.I.C., 194, Alexandra Park Road, N. 22.
 Vernon Harold Howard, B.Sc., School House, Ashbourne, Derbyshire.
 Kalya Isarasena, B.A., 51, Barkston Gardens, S.W. 5.
 Norman Heyworth Law, M.Sc., A.I.C., 59, Sydney Road, Beeston, Notts.
 Stanley Lewis Sheldon Thomas, B.Sc., A.R.C.S., 58, Malta Road, Leyton, E. 10.
 Frank George Young, Ph.D., 85, Fitzjohn's Avenue, N.W. 3.

and also of the following, whose applications have been accepted by the Council under Bye-Law I (2) :

Neoh Thean Chye, 71, Owen Road, Batu Gajah, Perak, F.M.S.
 Hans Dohse, Dr., Deutschestr. 26, Dortmund-Eving, Germany.
 Neil E. Gordon, M.Sc., Ph.D., Central College, Lafayette, U.S.A.
 Ahmad Kamal, M.Sc., 13, Judges Court Road, Alipore, India.

Forms of Recommendation for Fellowship were read for the second time in favour of six candidates.

The following papers were read :—

- “The constitution of tannins. Part V. The synthesis of some flavinacols.” By A. RUSSELL and J. TODD.
 “Studies in chelation. Part V. Hydroxyacetylhydrindenes.” By W. BAKER. “Part VI. Hydroxy-derivatives of acetylnaphthalenes, benzonitrile, and carboxylic esters.” By W. BAKER and G. N. CARRUTHERS.
 “Syntheses in the phenanthrene series. Parts I to VI.” By W. F. SHORT (with MISS A. HIGGINBOTTOM, P. HILL, T. R. SHERWOOD, H. STROMBERG, A. E. WILES, and J. WOODCOCK).

MEETINGS OUTSIDE LONDON.

A meeting under the auspices of the Society was held on February 19th, 1937, at 7.30 p.m., at the Royal Technical College, Glasgow, when Professor J. Kendall, M.A., D.Sc., F.R.S., delivered a lecture entitled “Ionic Migration.” The chair was taken by Professor T. S. Patterson, D.Sc., Ph.D. A vote of thanks to the Lecturer, proposed by Dr. R. Wright, was carried with acclamation.

A meeting of the Society was held jointly with the University of Sheffield Chemical Society in the Chemistry Department of the University, Sheffield, on Friday, February 19th, 1937, at 5.30 p.m., with Professor G. M. Bennett in the Chair. Professor H. M. Dawson lectured on “The Unravelling of Complex Reactions,” and described in a lucid manner the methods whereby the ten separate reactions involved in the hydrolysis of sodium bromoacetate had been isolated and studied.

At the conclusion a vote of thanks to the Lecturer was moved by the Chairman, seconded by Dr. S. Glasstone, and carried with acclamation.

A meeting under the auspices of the Society was held in the Chemistry Theatre of the University, Liverpool, on Wednesday, February 24th, 1937, at 6 p.m., when Dr. J. J. Fox, O.B.E., delivered a lecture on “Some Aspects of Modern Analytical Chemistry.” The lecture was greatly appreciated by a large audience.

A cordial vote of thanks to the Lecturer was proposed by the City Analyst (Assoc. Professor W. H. Roberts) and seconded by Mr. F. C. Guthrie. Professor E. C. C. Baly, C.B.E., F.R.S., presided.

A meeting of the Society was held jointly with the University of St. Andrews Chemical Society on Friday, February 26th, 1937, at 5 p.m., in the Chemistry Lecture Theatre of the United College, St. Andrews. The Chair was taken by the President, Mr. D. Gall, B.Sc. Professor G. M. Bennett, M.A., Sc.D., delivered a lecture on "Crystallography as a Chemical Tool." A discussion followed in which Professor J. Read and Dr. R. Roger took part. A vote of thanks to the Lecturer was proposed by Dr. Helen Dunlop.

A meeting under the auspices of the Society was held on March 15th, 1937, at 6 p.m., in the Chemistry Lecture Theatre of the University of Liverpool when Professor D. Keilin, D.Sc., F.R.S., delivered a lecture entitled "Mechanisms of Some Biological Oxidations."

The Chair was taken by Professor H. J. Channon, and a cordial vote of thanks to the Lecturer was proposed by Professor R. A. Peters and seconded by Dr. R. Gaddie.

REPORTS ON PROGRESS IN PHYSICS, VOLUME III.

Volume III of the Physical Society's *Reports on Progress in Physics* deals with advances in physical science up to the end of 1935. The scope of the volume may be gauged from the list of contents, and each report is contributed by a specialist in his particular subject. The aim of these reports is to assist the non-specialist in his endeavour to keep himself informed of the developments constantly being made. Further particulars can be obtained from

The Physical Society,
1, Lowther Gardens,
Exhibition Road,
London, S.W. 7.

Application for this volume (price 20s. post free) should be made to The Physical Society or to any Bookseller.

BRITISH STANDARDS INSTITUTION.

Copies of draft specifications for Winchester Bottles and for One-Mark Capillary Pipettes have been received from the British Standards Institution for technical comment and criticism. The copies have been placed in the Library.

List of papers, or abstracts thereof, received between February 18th and March 11th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- "The ether-soluble constituents of sarsaparilla root. Part I." By J. C. E. SIMPSON and N. E. WILLIAMS.
 "Gluco-ascorbic acid." By W. N. HAWORTH, E. L. HIRST, and J. K. N. JONES.
 "The identity of iosene with α -dihydrophylloladene." By L. H. BRIGGS.
 " $\alpha\beta$ -Diphenylpropaldehyde." By H. BURTON and C. W. SHOPPEE.
 "The functional relation between the constants of the Arrhenius equation." By R. A. FAIRCLOUGH and C. N. HINSHELWOOD.
 "Experiments on the synthesis of brazilin and hæmatoxylin. Part V." By H. APPEL, W. BAKER, H. HAGENBACH, and R. ROBINSON.

- "On a new calcium silicophosphate." By G. NAGELSCHMIDT.
- "Iminazoles. Part I. The synthesis of *dl*-thiolhistidine." By A. N. DEY.
- "The influence of solvents and of other factors on the rotation of optically active compounds. Part XXXIV. The influence of water and of deuterium oxide." By C. BUCHANAN.
- "Mechanism of polymerisation. Part I. Dimeric tetramethylethylene." By H. BRUNNER and E. H. FARMER.
- "The synthesis of 8:8'-dinitro-1:1'-dinaphthyl, and of various related compounds." By H. H. HODGSON and J. H. CROOK.
- "Chemiluminescent organic compounds. Part IV. Amino- and hydrazino-*cyclophthal*-hydrazides and the relative luminescence power." By H. D. K. DREW and F. H. PEARMAN.
- "The transition state method in chemical reactions." By C. N. HINSHELWOOD.
- "Catalytic toxicity and chemical structure. Part I. The relative toxicity of sulphur compounds in catalytic hydrogenation." By E. B. MAXTED and H. C. EVANS.
- "Properties of the oxides of nitrogen. Part VI. Kinetics of combustion in the system N_2O_5/O_3 ." By (the late) T. M. LOWRY and R. V. SEDDON.
- "Alkaloids of senecio. Part III. Jacobine, jacodine, and jaconine." By G. BARGER and J. J. BLACKIE.
- "On the formation of nitrones by the action of aromatic nitroso-compounds on methylene ketones." By A. SCHÖNBERG and R. MICHAELIS.
- "Studies in the sterol group. Part XXXII. The bromination of 6-ketocholestanyl acetate." By I. M. HEILBRON, E. R. H. JONES, and F. S. SPRING.
- "Steroids and related compounds. Part I. The dehydration of *cis*- and *trans*-cholestane-3:5:6-triols." By V. A. PETROW.
- "Modified cinchona alkaloids. Part IV. Constitution." By T. A. HENRY, W. SOLOMON, and E. M. GIBBS.
- "Studies in the synthesis of vitamin-A. Part III." By J. W. BATTY, A. BURAWOY, I. M. HEILBRON, W. E. JONES, and A. LOWE.
- "Anthelmintics: Koussou. Part I. Protokosin." By B. A. HEMS and A. R. TODD.
- "Rottlerin. Part I." By A. MCGOOKIN, F. P. REED, and A. ROBERTSON.
- "The constitution of α -cyperone." By A. E. BRADFIELD, R. R. PRITCHARD, and J. L. SIMONSEN.
- "Adrenaline: an oxidation product." By D. RICHTER and H. BLASCHKO.
- "The conductivity of univalent electrolytes in water." By R. A. ROBINSON and C. W. DAVIES.
- "The oxidation of some polyhydroxylic and polyethylenic higher fatty acids by aqueous alkaline permanganate solutions." By T. G. GREEN and T. P. HILDITCH.
- "Some unsaturated sulphides derived from the chloroethylenes." By N. W. CUSA and H. MCCOMBIE.
- "Formaldehyde condensations with aliphatic ketones. Part II. Methyl ethyl ketone." By (SIR) G. T. MORGAN and C. F. GRIFFITH.

ADDITIONS TO THE LIBRARY.

I. Donations.

SIDGWICK, N. V. The organic chemistry of nitrogen. New edition. Revised and re-written by T. W. J. TAYLOR and WILSON BAKER. Oxford 1937. pp. xx + 590. 25s. net. (*Recd.* 4/3/37.)

From the Author and the Editors.

WILLIS, L. G. [Compiler.] Bibliography of references to the literature on the minor

elements and their relation to the science of plant nutrition. 2nd edition. New York 1936. pp. iv + 396. [In mimeograph form.] (*Reference.*)

From the Nitrate Corporation of Chile.

II. By purchase.

BELL, L. T. M. The making and moulding of plastics. London 1936. pp. viii + 238. ill. 12s. 6d. net. (*Recd.* 18/2/37.)

BERNHAEUER, KONRAD. Gärungschemisches Praktikum. Berlin 1936. pp. xviii + 249. ill. *M.* 12.60. (*Recd.* 11/3/37.)

CAVEN, R. M., and LANDER, G. D. Systematic inorganic chemistry from the standpoint of the periodic law. 5th edition. Revised by A. B. CRAWFORD. London 1936. pp. xxvi + 546. 9s. net. (*Recd.* 18/2/37.)

COMBER, NORMAN M. An introduction to the scientific study of the soil. 3rd edition. London 1936. pp. viii + 206. ill. 7s. 6d. net. (*Recd.* 18/2/37.)

CONN, H. J. Biological stains. 3rd edition. Geneva, N.Y. 1936. pp. 276. \$3. (*Recd.* 18/2/37.)

DONNAN, F. G., and HAAS, ARTHUR. [Editors.] A commentary on the scientific writings of J. WILLARD GIBBS. 2 vols. New Haven 1936. pp. xxiv + 742, xx + 605. ill. \$10. (*Recd.* 18/2/37.)

FEATHER, N. An introduction to nuclear physics. Cambridge 1936. pp. x + 213. ill. 10s. 6d. net. (*Recd.* 18/2/37.)

FOWLER, R. H. Statistical mechanics. 2nd edition. Cambridge 1936. pp. x + 864. ill. 50s. net. (*Recd.* 18/2/37.)

FUSS, V. Metallography of aluminum and its alloys. Translated from the German by ROBERT J. ANDERSON. [Cleveland, Ohio] 1936. pp. xiv + 424. ill. \$10. (*Recd.* 22/2/37.)

GATTERMANN, L. Laboratory methods of organic chemistry. Revised by HEINRICH WIELAND. Translated from the 24th German edition by W. MCCARTNEY. London 1937. pp. xvi + 435. ill. 18s. net. (*Recd.* 18/2/37.)

GOODMAN, HERMAN. Cosmetic dermatology. With dictionary of ingredients; discussion of anatomic, physiologic, and pharmacologic bases of cosmetic application [etc.]. New York 1936. pp. xvi + 591. (*Reference.*) \$6.

GURNEY, R. W. Ions in solution. Cambridge 1936. pp. viii + 206. ill. 10s. 6d. net. (*Recd.* 18/2/37.)

HANSLIAN, RUDOLF. [Editor.] Der chemische Krieg. Vol. I. Berlin 1937. pp. xvi + 779. ill. (*Reference.*) *M.* 36.

JAMES, W. O. An introduction to plant physiology. 3rd edition. Oxford 1936. pp. viii + 265. ill. 7s. 6d. net. (*Recd.* 18/2/37.)

LEA, F. C. Hardness of metals. London 1936. pp. viii + 141. ill. 12s. 6d. net. (*Recd.* 18/2/37.)

MAURER, KURT. Chemie der Inkrete und ihre wichtigsten Darstellungsmethoden. Leipzig 1937. pp. vi + 67. *M.* 7.20. (*Recd.* 8/3/37.)

NELSON, W. L. Petroleum refinery engineering. New York 1936. pp. viii + 647. ill. \$6. (*Recd.* 18/2/37.)

SCHAEFFER, FRITZ. Agrikulturchemie. Teil A: Boden. (Sammlung, N.F. Heft 35.) Stuttgart 1937. pp. 113. ill. (*Reference.*) *M.* 6.80.

TEED, P. LITHERLAND. Duralumin and its heat-treatment. London 1937. pp. x + 116. ill. 12s. 6d. net. (*Recd.* 18/2/37.)

VAN DYKE, H. B. The physiology and pharmacology of the pituitary body. Chicago 1936. pp. xviii + 577. ill. \$4.50. (*Recd.* 18/2/37.)

WILSON, A. H. The theory of metals. Cambridge 1936. pp. viii + 272. 18s. net. (*Recd.* 18/2/37.)

WOLDMAN, NORMAN E., and DORNBLATT, ALBERT J. Engineering alloys: names, properties, uses. [Cleveland, Ohio] 1936. pp. xviii + 622. (*Reference.*) \$10.

ZECHMEISTER, L., and CHOLNOKY, L. v. Die chromatographische Adsorptionsmethode. Grundlagen, Methodik, Anwendungen. Wien 1937. pp. xii + 231. ill. *M.* 14.40. (*Recd.* 11/3/37.)

ZIEGELMAYER, WILHELM, with the co-operation of HEINRICH PABST. Rohstoff-Fragen der deutschen Volksernährung. Eine Darstellung der ernährungswirtschaftlichen und ernährungswissenschaftlichen Aufgaben unserer Zeit. Dresden 1936. pp. xii + 289. ill. *M.* 12. (*Recd.* 8/3/37.)

III. Pamphlets.

DELAVALT, ROBERT. L'oxydation du magnésium a l'état liquide. Paris 1936. pp. viii + 94. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Forest Products Research*. Record No. 14. (Mycology Series No. 1.) Dry rot investigation in an experimental house. By W. P. K. FINDLAY. London 1937. pp. ii + 14. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Technical Publications. Series A. No. 50. The systems tin-germanium and tin-beryllium. By W. GUERTLER and M. PIRANI. London 1937. pp. 23. ill.

FORTHCOMING MEETINGS OUTSIDE LONDON.*LEEDS.*

Thursday, April 29th, 1937, at 7 p.m. Meeting for the reading of papers in the Lecture Theatre of the new Chemistry Building of the University.

NEWCASTLE AND DURHAM.

Fellows are invited to attend the following Bedson Lecture to be held in the Chemistry Lecture Theatre, Armstrong College :—

Friday, May 21st, 1937, at 6.30 p.m. Lecture on "Chemistry in Food Production," by Sir John Russell, O.B.E., D.Sc., F.R.S.

FORTHCOMING MEETINGS IN LONDON.

Thursday, April 15th, 1937, at 8 p.m.

Joint discussion with the London Section of the Society of Chemical Industry on "Physico-Chemical Problems Involved in Distillation." It will be opened by Professor J. Reilly, M.A., D.Sc.; continued by Dr. A. J. V. Underwood and Dr. E. H. Farmer, and will be followed by a general discussion.

Thursday, April 29th, 1937, at 8 p.m.

The Haber Memorial Lecture by Professor J. E. Coates, O.B.E., D.Sc.

Thursday, May 6th, 1937, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, May 20th, 1937, at 8 p.m.

Discussion on "Synthesis and Stereochemistry of Condensed Alicyclic Systems," to be opened by Dr. R. P. Linstead.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

ANNIVERSARY MEETINGS, 1937.

The Anniversary Meetings were held in London from March 17th to 19th, 1937.

Wednesday, March 17th.

At 2.30 p.m. A meeting of the Local Representatives was held at Burlington House at which reports by Local Representatives and other matters concerning the activities of the Society outside London were considered.

At 5.30 p.m. The Seventh Hugo Müller Lecture was given by Professor Dr. Victor M. Goldschmidt in the Lecture Theatre of the Royal Institution (by kind permission of the Managers).

Among the distinguished visitors welcomed by the PRESIDENT was His Excellency The Minister for Norway.

The PRESIDENT referred to the foundation of the Hugo Müller Lectureship in 1918 to commemorate the name of Professor Hugo Müller, President from 1885 to 1887, who was a benefactor of the Society.

In introducing Professor Goldschmidt, the PRESIDENT mentioned his distinguished career at Göttingen and at Oslo, and stated that his father, Professor Heinrich Goldschmidt, held the Chair of Chemistry for many years at the University of Oslo. He then called on Professor Goldschmidt to give the Seventh Hugo Müller Lecture entitled: "Principles of Distribution of Chemical Elements in Minerals and Rocks."

At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by SIR ROBERT ROBERTSON and seconded by SIR GILBERT MORGAN, was passed with enthusiasm.

The PRESIDENT proposed a vote of thanks to the Officers and Managers of the Royal Institution for granting the Society the use of the Lecture Theatre. This was passed with acclamation.

At 8 p.m. A Social Evening was held at the University of London (New Buildings, Bloomsbury, W.C. 1) by kind permission of the Senate, when an opportunity was afforded of inspecting the Court and Senate Rooms. Fellows and their guests present numbered about 170. A light buffet supper and refreshments were provided, and after an entertainment by Miss Menetta Marriott and Mr. Percy Barrs, dancing took place until midnight.

Thursday, March 18th.

Morning. The following visits which had been arranged were well attended by Fellows:

- (a) To the Research Laboratories of the Anglo-Iranian Oil Co. at Sunbury-on-Thames.
(By motor conveyance from Burlington House.)
- (b) To the Chemical Laboratories of the Imperial College of Science and Technology, South Kensington, S.W. 7.

At 4 p.m. The Annual General Meeting, preceded by tea at 3.30 p.m., was held at Burlington House. (A report appears in the *Journal* for April.)

At 7 for 7.30 p.m. The Anniversary Dinner was held at Grosvenor House, Park Lane, and the President, Professor N. V. SIDGWICK, C.B.E., D.Sc., F.R.S., presided over a company of 190. Sir Donald Somervell, K.C., M.P., Attorney General, who was the principal guest of the evening, was accompanied by Lady Somervell, and among other official guests present were His Excellency the Minister for Norway, Professor Victor M. Goldschmidt (Hugo Müller Lecturer), Sir William Bragg (President of the Royal Society), Mr. H. L. Eason (Vice-Chancellor of London University), Dr. A. D. Lindsay (Vice-Chancellor of Oxford University), Sir William Llewellyn (President of the Royal Academy), Sir Henry Pelham (Permanent Secretary to the Board of Education), Sir Henry T. Tizard (Rector of the Imperial College), and the Presidents of many scientific societies and institutions.

After the loyal toasts had been honoured, the following toasts were proposed :

By SIR DONALD SOMERVELL, O.B.E., K.C., M.P., Attorney General, The Chemical Society. Response : The President, Professor N. V. SIDGWICK.

By Professor F. G. DONNAN : The Guests. Responses : His Excellency ERIK A. COLBAN, Minister for Norway, and Sir HENRY T. TIZARD, K.C.B., M.A., F.R.S.

At the conclusion of the Dinner Professor F. G. DONNAN was formally inducted as President.

Friday, March 19th.

The following visits which had been arranged were well attended by Fellows :

Morning.

- (a) To the Mond Nickel Precious Metals Refinery at Acton. (By motor conveyance from Burlington House.)
- (b) To the Chemical Laboratories of University College, Gower Street, W.C. 1.

Afternoon.

- (a) To the Research Laboratories of Messrs. J. Lyons & Co., Ltd., West Kensington.
- (b) To the Research Laboratories of the Gas Light and Coke Company, Fulham.

Ordinary Scientific Meeting, Thursday, April 15th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death on March 11th, of Professor Amé Pictet, who was elected an Honorary Fellow of the Society in 1923. It was stated that at its Meeting that afternoon the Council had passed the following resolution :

“ The President, Officers and Council of the Chemical Society learned with profound regret of the death on the 11th March of Professor Amé Pictet, who was elected an Honorary Fellow of the Society on the 1st March, 1923, and desire to express their deep sorrow at the loss of their distinguished colleague and their high appreciation of the services he has rendered to the Science of Chemistry. They wish to convey their deep sympathy to the relatives of their late Honorary Fellow in their irreparable loss.”

Those present stood while this was read.

The PRESIDENT also referred to the loss sustained by the Society, through death, of the following Fellows :

	Elected.	Died.
Jack Ward Drake	1936	April 11th, 1937.
Albert John Sach	1888	March 1st, 1937.
Michael Edmund Stephen	1897	Feb. 12th, 1936.
Sydney Young	1882	April 8th, 1937.

It was announced :

1. That the Council had conveyed its thanks to Dr. G. McGowan and to Dr. G. T. Moody, who had sent contributions of £10 and £50 respectively on completing 50 years of Fellowship.

2. That the congratulations of the Society had been conveyed to Dr. H. G. Colman and Sir Arthur Harden, who had completed 50 years of Fellowship on March 17th.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Geoffrey Gordon Bates, 95, Highbury Hill, N. 5.

Cyril Carson, 51, Broxash Road, Clapham Common, S.W. 11.

Claude Leopold Leszynski Claremont, B.Sc., F.I.C., 148, Rosendale Road, West Dulwich, S.E. 21.

Eric Richard Gardner, A.R.C.S., 6, Diamond Terrace, Greenwich, S.E. 10.

Harold Inglesent, Lea Holme, Archer Park, Middleton, Manchester.

Robert Gordon Israel, Ph.D., 15, Widecombe Way, N. 2.

Paul Laeuger, Ph.D., Wenkenhaldenweg 12, Riehen, near Basle, Switzerland.

Dennis Arthur Sydney Martin, 35, Larpent Avenue, Putney, S.W. 15.

Henry Attwood Mumford, Calfont Court, Baker Street, N.W. 1.

Kashichi Ono, D.Sc., Nippon Koryo Yakuhin Kaisha, Ltd., Wakihamacho 3-chome, Fukiaku, Kobe, Japan.

Stanley Miles Partridge, Ph.D., A.I.C., Carantoc, Church Road, Northolt, Middlesex.

William Wild, Ph.D., A.I.C., 1, Bewerley Street, Dewsbury Road, Leeds 11.

and also of the following whose applications have been accepted by the Council under Bye-Law I (2) :

Joseph Henry Brant, Ph.D., Eastman Corporation, Ltd., Kingsport, Tenn., U.S.A.

Max Roger, D.-ès-Sc., 26, Rue Parmentier, Neuilly s/Seine, France.

Forms of Recommendation for Fellowship were read for the second time in favour of 15 candidates.

A Joint Discussion with the London Section of the Society of Chemical Industry on " Physico-chemical Problems involved in Distillation " was held, and the PRESIDENT was supported on the platform by Dr. H. E. Cox, Chairman of the London Section of the Society of Chemical Industry.

Professor J. Reilly opened the discussion with a paper on " Physico-chemical Problems involved in Distillation." This was followed by Dr. A. J. V. Underwood on " Physico-chemical Problems of Fractionating Column Design," and Dr. E. H. Farmer on " Fractionation by Evaporative Distillation."

The following also took part in the discussion : Dr. F. H. Carr, Professor Hogness, Mr. P. Docksey, Dr. A. E. Dunstan, Mr. M. B. Donald, Dr. R. Lessing, Mr. A. L. Bloomfield, Mr. T. J. Ralph, and Mr. G. A. Dummett ; Prof. Reilly and Dr. Underwood replied.

MEETINGS OUTSIDE LONDON.

A meeting of the Society was held jointly with the University College of North Wales Chemical Society on Thursday, January 21st, 1937, at 5.30 p.m., with Mr. G. EDWARDS, B.Sc., in the Chair. Professor M. W. TRAVERS, D.Sc., F.R.S., lectured on " The Quantitative Study of some Gas Reactions," and dealt with both the experimental and the theoretical methods of attacking the complex problems arising from the study of apparently simple gaseous reactions. At the conclusion of the lecture he was accorded a very hearty vote of thanks, which was carried with acclamation.

A meeting of the Society was held in the Lecture Theatre of the new Chemistry Department of the University of Leeds on Thursday, January 28th, 1937, at 7 p.m.

The Chair was taken by Professor R. WHYTLAW-GRAY, O.B.E., F.R.S., and a lecture entitled " Silicates " was delivered by Professor W. L. BRAGG, O.B.E., F.R.S. There was a good attendance and after the discussion a hearty vote of thanks was accorded to the Lecturer, and carried with acclamation.

A meeting of the Society was held in the Chemistry Lecture Theatre of Manchester University, on Thursday, March 11th, 1937, at 7 p.m., Professor J. KENNER, D.Sc., F.R.S., being in the Chair.

The following were elected to form a local committee to assist the local representatives : Professor I. M. Heilbron, Professor J. Kenner, Dr. R. H. Pickard, Mr. P. Chorley, Dr. F. Fairbrother, and the two local representatives, Dr. E. H. Rodd and Dr. G. N. Burkhardt.

The following papers were read and discussed :

- “The action of piperidine on *mesobenzanthrone*.” By W. BRADLEY.
 “The bromination of 6-ketocholesteryl acetate.” By I. M. HEILBRON, E. R. H. JONES, and F. S. SPRING (read by E. R. H. Jones).
 “The trimethylene biradical.” By C. E. H. BAWN and R. F. HUNTER (read by R. F. Hunter).
 “The molecular size of starch and its derivatives.” By W. A. RICHARDSON.

Those taking part in the discussion included Dr. R. F. Thomson, Dr. D. H. Hey, Dr. H. A. Piggott, Dr. E. H. Rodd, Dr. F. S. Spring, Mr. A. J. Hailwood, Professor M. Polanyi, Mr. R. J. W. Reynolds, Mr. J. A. Radley, and Dr. E. E. Walker.

Meetings of the Society were held jointly with the University of Birmingham Chemical Society in the Chemistry Department of the University, Edgbaston, on Monday, March 8th, and Monday, March 15th, 1937. At the first lecture Professor E. K. RIDEAL, M.B.E., F.R.S., lectured on “Recent Developments in Surface Action,” and at the second meeting, Professor R. ROBINSON, D.Sc., F.R.S., gave an account of “Brazilin.” The lectures were greatly appreciated by large audiences.

A meeting of the Society was held jointly with the Edinburgh Sections of the Society of Chemical Industry and the Institute of Chemistry on Wednesday, March 17th, 1937, at 7.30 p.m., in the rooms of the Pharmaceutical Society, Edinburgh. Dr. E. B. LUDLAM was in the Chair, and Professor C. N. HINSHELWOOD, F.R.S., gave a lecture on “Some Fundamental Laws of Chemical Change.” A discussion followed, in which Professor Barger, Dr. Kermack, Dr. Ludlam, Mr. Rocca, and Dr. A. Smith took part, and a hearty vote of thanks, proposed by Professor Barger, was carried with acclamation.

List of papers, or abstracts thereof, received between March 11th and April 15th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- “Migration reactions in polycyclic systems. Part II. The Fries rearrangement of 4-acetoxydiphenyl.” By K. H. CHEETHAM and D. H. HEY.
 “Catalysed polymerisation in mono-layers of drying oils.” By G. GEE and E. K. RIDEAL.
 “Compounds of *p*-nitrodiphenyl sulphide and of *p*-nitrodiphenyl ether with sulphuric acid. An example of thioquinonoid formation.” By H. H. HODGSON and R. SMITH.
 “Hydrogen cyanide synthesis of aromatic aldehydes. Part II. Diphenyleneoxide-3-aldehyde.” By L. E. HINKEL, E. E. AYLING, and J. H. BEYNON.
 “The constitution and reactions of thiocarbonyl tetrachloride. Part III. Reaction with primary alkylamines and phenols.” By J. M. CONNOLLY and G. M. DYSON.
 “The coupling of diazonium salts with derivatives of cyclic β -ketonic acids.” By R. P. LINSTEAD and A. B. WANG.
 “The synthesis of dicyclic α -ketones with an angular methyl group.” By G. A. R. KON, R. P. LINSTEAD, and C. SIMONS.

- “Long-chain carbon compounds. Tesserakaitriacontanoic and hexakaitessacontanoic acids and their derivatives.” By F. FRANCIS, (MISS) A. M. KING, and J. A. V. WILLIS.
- “Isomerisation of 2 : 3-dimethylascorbic acid.” By W. N. HAWORTH, E. L. HIRST, F. SMITH, and W. J. WILSON.
- “The condensation of deoxybenzoin with aromatic aldehydes and ketones. Part II. Condensation of substituted deoxybenzoins with substituted acetophenones.” By H. J. CALLOW and D. W. HILL.
- “The ring structure of xylal.” By W. N. HAWORTH, E. L. HIRST, and C. S. WOOLVIN.
- “Degradation of methylated inulin to hexamethyl difructosan.” By W. N. HAWORTH, E. L. HIRST, and F. A. ISHERWOOD.
- “Polysaccharides. Part XXIV. Yeast mannan.” By W. N. HAWORTH, E. L. HIRST, and F. A. ISHERWOOD.
- “Polysaccharides. Part XXV. α -Amylodextrin.” By W. N. HAWORTH, E. L. HIRST, H. KITCHEN, and S. PEAT.
- “Acetone derivatives of gluconic acid.” By W. N. HAWORTH, E. L. HIRST, and K. A. CHAMBERLAIN.
- “Synthetical experiments in the isoflavone group. Part VIII. Note on ψ -baptigenin.” By W. BAKER, R. ROBINSON, and N. M. SIMPSON.
- “Synthetical experiments in the chelidonine-sanguinarine group of the alkaloids. Part I.” By F. M. RICHARDSON, R. ROBINSON, and E. SEIJO.
- “A modification of Pschorr’s phenanthrene synthesis, exemplified by the synthesis of 1 : 2 : 5 : 6-dibenzanthracene and chrysene.” By A. C. BOTTOMLEY and K. H. CHEETHAM.
- “The synthesis of polyterpenoid compounds. Part III.” By J. W. COOK and C. A. LAWRENCE.
- “The estimation of cyclopentadiene and indene: the polymerisation of these hydrocarbons in carbon tetrachloride solution.” By D. L. HAMMICK and (MISS) D. LANGRISH.
- “Optical rotatory dispersion in the carbohydrate group. Part VIII. Tetramethyl δ -gluconolactone and tetramethyl δ -galactonolactone.” By T. L. HARRIS, E. L. HIRST, and C. E. WOOD.
- “Reactions of α -amino-ketones.” By T. S. STEVENS and B. A. HEMS.
- “The mechanism of hydrolysis and alcoholysis of alkyl halides: the reactions of methyl, ethyl, and *tert.*-butyl bromides with aqueous ethyl alcohol.” By W. TAYLOR.
- “The transference of water. Part III. Its dependence on concentration in the electrolysis of barium chloride solutions.” By (MISS) M. TAYLOR and (MISS) V. R. WILLCOX.
- “The formation of organo-metalloidal and similar compounds by micro-organisms. Part V. Methylated alkyl sulphides. The fission of the disulphide link.” By F. CHALLENGER and A. A. RAWLINGS.
- “The alkaloid of *Solanum auriculatum*, Ait.” By A. R. ANDERSON and L. H. BRIGGS.
- “Liquid phase reactions at high pressures. Part I. Hydrolysis of esters and the Knoevenagel reaction.” By D. M. NEWITT, R. P. LINSTEAD, R. H. SAPIRO, and E. J. BOORMAN.
- “The nature of the interaction of cupric salts and chelate diamines.” By F. W. CHATTAWAY and H. D. K. DREW.
- “Azo-indicators with a quaternary ammonium group.” By G. S. HARTLEY.
- “Usnic acid. Part V.” By F. H. CURD and A. ROBERTSON.
- “Imidochlorides. Part V. A synthesis of 4-hydroxy-3-carbethoxy-2-phenyl-naphthoquinolines.” By V. R. HEERAMANECK and R. C. SHAH.
- “Mercuration of trimethylgallaldehyde and related substances.” By T. M. SHARP.
- “The Friedel-Crafts condensation of substituted glutaric anhydrides with benzene and the formation of isomeric phenylbenzoylpropionic acids in the reaction between phenylsuccinic anhydride and benzene.” By A. ALI, R. D. DESAI, R. F. HUNTER, and S. M. M. MUHAMMAD.
- “Phthalocyanines. Parts IX to XII. Introduction and note on nomenclature.” By R. P. LINSTEAD. “Part IX. Derivatives of thiophen, thionaphthen, pyridine, and pyrazine.” By R. P. LINSTEAD, E. G. NOBLE, and J. M. WRIGHT.

- “Phthalocyanines. Part X. Experiments in the pyrrole, *isooxazole*, pyridazine, furan, and triazole series” By J. A. BILTON and R. P. LINSTEAD.
- “Phthalocyanines. Part XI. The preparation of octaphenylporphyrazines from diphenylmaleinitrile.” By A. H. COOK and R. P. LINSTEAD.
- “Phthalocyanines. Part XII. Experiments on the preparation of benzporphyrins.” By R. P. LINSTEAD and E. G. NOBLE.
- “Azacyanines.” By (Miss) N. I. FISHER and (Miss) F. M. HAMER.

FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, MAY 6th, 1937.

ARCUS, CHARLES LAURENCE, 152, Browning Road, Manor Park, E. 12. English. London. B.Sc. (Special Chemistry), 1st Class. Research Student in Organic Chemistry, Battersea Polytechnic. Date of birth 12th July, 1914. (*Signed by*) J. Kenyon, Denis I. Duveen, R. Conden.

BEAMAN, GEORGE BERNARD, 27, Peel Street, Barnsley, Yorks. British. School Teacher. B.Sc. (Wales), University College, Cardiff. Senior Science Master, Barnsley Central School, Yorks. Formerly Assistant Chemist, National Oil Refineries, Llandarcy, Neath. (*Signed by*) H. Ll. Bassett, W. J. Jones, S. T. Bowden.

BRADBURY, FRANK RAYMOND, 32, Alderbrook Road, S.W. 12. British. Research Student. B.Pharm. (Lond.), B.Sc. Special Chemistry, 2nd Class Hons. (Lond.), Ph.C. (obtained externally from University College, Nottingham). Ransom Research Fellow, College of Pharmaceutical Society, University of London. (*Signed by*) Wilfred H. Linnell, Adrien Albert, T. E. Wallis.

BRANCKER, ALBERT VICTOR, “Caroni,” Ableton Road, Pelling, Bristol. English. Chemist. B.Sc. (Bristol). Flocculation, Heavy Media, Inventions for Messrs. International Combustion, Ltd., London. Research on Petroleum and Coal Oils, for Messrs. Swallow Distillation Ltd., Sheffield. Analysis of Foods for Campden Research Station, University of Bristol. (*Signed by*) W. E. Garner, M. Taylor, T. Malkin, W. B. Adam.

BREACH, ARTHUR MICHELL, Ashton House, The Mount, Frome, Somerset. British. Director. Leather Manufacturing Company. Educated Hurstpierpoint College, Sussex, subsequently, Leathersellers Technical College, London. Member Society Leather Trades Chemists. Control of manufacturing chemistry in leather production and evolution of new processes. (*Signed by*) F. W. Rixon, M. Taylor, M. Nierenstein, E. B. Maxted.

BROWN, NORMAN COOPER, Elm House, Ampleforth, York. English. Student. Amelia Jackson Exhibitioner, Exeter College, Oxford. Date of birth 19th Aug., 1916. (*Signed by*) E. Hope, H. C. Raine, J. Hulton Wolfenden.

CHATT, JOSEPH, Emmanuel College, Cambridge. British. Taking Chemistry, Part II, Camb. Nat. Sci. Trip. 1st class in Part I Natural Sciences, Cambridge. Date of birth 6th Nov., 1914. (*Signed by*) F. B. Kipping, F. P. Bowden, R. G. W. Norrish.

CLARKE, HERBERT RENSHAW, 26, Manton Road, Abbey Wood, S.E. 2. British. Member of staff of Messrs. Gedeon Richter (G.B.), Ltd., specialising in Hormonology and Endocrinology. Also Fellow of Institute of Chemist Analysts (Hon. Treasurer). M.P.S., Edinburgh. I am a director of Pharmaglan Laboratories, Ltd., as well as on the staff of Messrs. Gedeon Richter, Ltd., who are analytical and research chemists, as well as manufacturers. I wish to make good use of the Library at Burlington House. (*Signed by*) J. Cofman-Nicoresiti, G. Cofman-Nicoresiti, Alexander H. Hayes.

CLEMENT, GEORGE HONOR, 19, Royal Crescent, Holland Park, W. 11. British. Chemist and Technical Adviser. Associate of the Institute of Chemistry. 1. Analytical Chemist (General); J. S. Fry and Sons, Ltd., Somerdale (8 years), 1928—36. 2. Chemist and Technical Adviser; The London Fumigation Company, 1936—. (*Signed by*) Thomas Malkin, R. R. Melhuish, Chas. E. Clarkson.

CRITCHLOW, JOHN, 14, Sunnyfield Road, Heaton Mersey, Manchester. British. Lecturer, Department of Pure and Applied Chemistry, Stockport College for further Education since 1932. B.Sc. (Hons.), Manchester. Desirous of obtaining the publications of the Society to keep in touch with modern work and to use the Library. (*Signed by*) F. S. Spring, J. E. Myers, Colin Campbell.

DAZELEY, GEORGE HARRY, 10, Malcolm Street, Cambridge. English. Research Student. B.A. (Cantab.). Researching in Organic Chemistry with Mr. W. H. Mills. Date of birth 16th August, 1914. (*Signed by*) F. G. Mann, P. Maitland, R. G. W. Norrish.

DVORKOVITZ, VLADIMIR, 42, Rodney Court, Maida Vale, W. 9. British. Research Student. B.Sc., 2nd Class, Special Honours Chemistry of London University. Two years student for first degree at King's, London. At present research student in organic chemistry for Ph.D. Date of birth 9th April, 1917. (*Signed by*) Samuel Smiles, E. W. McClelland, A. J. Allmand.

EDGAR, JOSEPH LEWIS, 47, Telford Avenue, Streatham, S.W. 2. British. Student Research Chemist. B.Sc., London; Associate Royal College of Science. Date of birth 15th Feb., 1915. (*Signed by*) H. V. A. Briscoe, James C. Philip, H. J. Emeléus.

FALCONER, RODERICK, 45, High Street, Daventry, Northants. British. B.Sc., External, London. Organic Research Student at University College, Nottingham. Date of birth 20th July, 1914. (*Signed by*) J. Masson Gulland, B. D. Shaw, E. Tidd, J. B. Firth, John C. Roberts.

GIBLING, THOMAS WILLIAM, 12, Clifton Place, Newton Bar, Wakefield. English. Second Master, Wakefield Grammar School. B.Sc., Lond. (1905); B.A., Lond. (1908). Science Master, Thorne Grammer School, 1906—7; Wakefield Grammer School, 1907—33. Head of Chemistry Dept., Wakefield Grammer School since 1933. (*Signed by*) James Colvin, R. Stevenson Bradley, J. W. Baker.

HOOPER, CYRIL JOHN WILLIAMS, 194, Alexandra Park Road, N. 22. British. Research Chemist. A.R.C.S., B.Sc., Ph.D., D.I.C. (London). Ph.D. Thesis, London, 1936; "The Dependence of the Cathode Potential on the Conditions of Electrolysis of Nickel Sulphate Solutions." Date of birth 25th May, 1913. (*Signed by*) James C. Philip, H. J. T. Ellingham, A. A. Eldridge.

HOWARD, VERNON HAROLD, School House, Ashbourne, Derbyshire. British. Schoolmaster. B.Sc. (2nd Class Chemistry), Leeds. Date of birth 25th Sept., 1913. (*Signed by*) Frederick Challenger, H. Burton, S. Blackburn, C. W. Shoppee, J. W. Baker, J. Bruce.

HOWELLS, WILLIAM JOHN, Tydfil House, The Parade, Porth, Glam. British-Welsh. Head Master, County School, Porth. M.Sc. (Wales), Cardiff University College. 1. Senior Chemistry Master at Quakers' Yard Sec. School, for eight years, and I still take Higher Certificate candidates in Chemistry for a few periods a week. 2. I have published the following papers in the *J.C.S.* : 1929, 910; 1930, 2010; 1931, 3208. (*Signed by*) H. Ll. Bassett, S. T. Bowden, W. J. Jones, F. S. Kernick.

ISARASENA, KALYA, 51, Barkston Gardens, S.W. 5. Siamese. Student. B.A., Cambridge. Research Student. Date of birth 24th Nov., 1915. (*Signed by*) A. Robertson, A. McGookin, R. A. Morton.

JORDAN, EILEEN CONSTANCE, 25, Culverhouse Road, Luton, Beds. British. Student of Chemistry. Date of birth 27th Jan., 1918. (*Signed by*) James F. Spencer, Margaret H. C. Wiseman, Corona G. Trew, W. R. A. Hollens.

LAMCHEN, MAX, 59, Nevern Square, Earl's Court, S.W. 5. South African (British). Student. M.Sc. (Pretoria S.A.). Research for one year under Prof. G. I. Finch at Imperial College. Lecturing in Metallurgy for one year at the Technical College, Pretoria, S. Africa. Date of birth 19th April, 1912. (*Signed by*) G. Ingle Finch, D. M. Newitt, D. T. A. Townend.

LAW, NORMAN HEYWORTH, 59, Sydney Road, Beeston, Notts. British. Analytical Chemist. M.Sc. (New Zealand) 1st Class Hons., A.I.C. Contributions: "The Rate of Reaction between Ferric and Stannous Salts in Solution" (*Trans. Faraday Soc.*, 1935, 31, 899). 2. "Conductometric Titration of the Isomeric Chromic Chlorides with Silver Nitrate" (*ibid.*, 1936, 32, 1461). (*Signed by*) A. Nutter Smith, E. B. R. Prideaux, Joseph Marshall.

OPPEGAARD, ASSUR GIESSING, 26, West Avenue, Billingham, Co. Durham. Norwegian. Chief Chemist of British Titan Products Co., Ltd. Dipl. Ing. Norwegian Technical University, Trondheim. Lieutenant Commission Technical Division of Norwegian Army. Research and Works Chemist of Titan Co., Fr. stad, Norway, and later of Titan G.m.b.H. of Leverkusen, Germany. Now above-mentioned occupation. (*Signed by*) J. Davidson Pratt, N. V. Sidgwick, O. L. Brady.

RILEY, ANTHONY WARREN, 59, Maida Vale, W. 9. British. Company Director and Manufacturing Chemist. Fellow Institute Chemists Analysts. Endocrinologist and Hormonologist. Director Pharmaglan Laboratories, Ltd. (Pharmaceuticals, Organotherapy), Wigmore Street, W. Director Supplies, International Laboratories, Ltd.; Director Clinical Treatment, Bioglan Laboratories, Hertford; Director of Clinic (Organotherapy), 63, Wimpole Street, W. 1. (*Signed by*) J. Cofman-Nicoresi, G. Cofman-Nicoresi, Alexander H. Hayes.

SMITH, GEORGE STANLEY, 166, Wickham Chase, West Wickham, Kent. British. Civil

Servant. B.Sc. Hons., 1921, London; A.I.C. Papers published in *Analyst*: "Colour Reactions of Carbazides and Carbamides with Diacetyl and Diacetyldioxime" (*Analyst*, 1935, 60, 171—172); "Determination of Small Amounts of Boron by Means of Quinalizarin" (*ibid.*, 1935, 60, 735—739); "Determination of Magnesium in Duralumin" (*ibid.*, 1935, 60, 812—814). (*Signed by*) J. R. Partington, D. C. Jones, W. H. Patterson.

SMITH, HARRY JAMES ERIC, 4, Huguenot Place, Wandsworth Common, S.W. 18. British. Designer and Craftsman. Diplomas and Certificates in Art. Investigation in Colours and Dyes as applied to Art. (*Signed by*) F. H. Lowe, C. Dorée, J. C. Crocker.

THOMAS, STANLEY LEWIS SHELDON, 58, Malta Road, Leyton, E. 10. English. Student. A.R.C.S.; B.Sc. (1st Class Hons.), London, Imperial College. Date of birth 2nd Aug., 1915. (*Signed by*) R. P. Linstead, G. A. R. Kon, H. N. Rydon.

TYSON, JOHN TYSON, 10, Hurlingham Court, S.W. 6. British. Research Student. A.R.C.S., B.Sc., London (not conferred). Six months research. Date of birth 16th Feb., 1916. (*Signed by*) James C. Philip, P. C. Bull, G. Ingle Finch.

VASEY, CHARLES HENRY, Lincoln College, Oxford. British. Student of Chemistry. I wish to receive the publications, attend the meetings and use the Library. Date of birth 15th May, 1917. (*Signed by*) N. V. Sidgwick, F. M. Brewer, E. G. J. Hartley.

WHITE, THEODORE, Edward Davies Chemical Laboratories, Aberystwyth. British. Research Student of Chemistry. B.Sc. (University College of Wales, Aberystwyth). Date of birth 12th Nov., 1912. (*Signed by*) T. Campbell James, C. R. Bury, L. J. Hudleston.

YOUNG, FRANK GEORGE, 85, Fitzjohn's Avenue, N.W. 3. British. Member of the Scientific Staff, Medical Research Council. B.Sc. and Ph.D. (London), University College, London. About twenty publications of biochemical interest in the *Biochemical Journal*, *Journal of Physiology*, etc. Teacher of elementary and advanced biochemistry for the past six years. (*Signed by*) R. K. Callow, Harold King, O. Rosenheim, J. C. Drummond.

Forms of Recommendation for Fellowship accepted by the Council under By-Law I (2) :

CHYE, NEOH THEAN, Eliot Hall, Hongkong University. Chinese. Science Student. I am much interested in the study of chemistry, and believe, if elected, I shall be able to keep in touch with the development of Chemistry towards progress in the Industrial world. Date of birth 10th July, 1916. (*Signed by*) N. V. Sidgwick.

DOHSE, HANS, Dortmund-Eving, Deutschr. 26. Deutsch. Geschäftsführer der Gesellschaft für Kohlentechnik m.b.H. u. der Bergwerksverband zur Verwertung v. Schutzrechten der Kohlentechnik G.m.b.H., beide in Dortmund-Eving. Chemiker, Studien an den Universitäten Kiel u. Freiburg, Doktorprüfung an der Universität Kiel am 26.5.27. (*Signed by*) M. Bodenstern.

GORDON, NEIL E., Central College, Fayette, Mo. U.S. of America. Teacher. Ph.B.; Pd.B.; A.M., Syracuse University; Ph.D., The Johns Hopkins University. State Chemist, Maryland, 1920—28. Professor of Chemistry, The Johns Hopkins University, 1928—36. Published in *Journal American Chemical Society* and *Industrial Engineering Chemistry*. (*Signed by*) F. G. Donnan.

KAMAL, AHMAD, Khaleel Manzil, 4 Marris Road, Aligarh, U.P. India. Chemical Assistant, Indian Stores Department, Alipore Test House, 13, Judges Court Road, Alipore, Calcutta (India). Moslim. Chemical Assistant. M.Sc. (Aligarh) in Chemistry. I have done research work for one year and a half under Dr. R. D. Desai and Dr. R. F. Hunter on (1) The Condensation of Camphorcyanohydrin with Amines; (2) The Diacyl Derivatives of α -Naphthol. This work is to be shortly published. Date of birth 7th April, 1914. (*Signed by*) R. D. Desai.

LA LANDE, WILLIAM ALFRED, JR., 3309, Baring Street, Philadelphia, Pa., U.S.A. American. Assistant Professor of Chemistry. B.S. in Chem., M.S., Ph.D., all from Univ. of Penna. Teacher of analytical chemistry and organic chemistry in the undergraduate and graduate schools of the Univ. of Penna. Published research work in organic chemistry. Chemical consultant for various industrial plants. (*Signed by*) Alfred Russell.

SUNAWALA, SOLI DOSABHAI, Industrial Research Bureau, New Dehli, Simla, India. Indian (British). Technical Assistant. M.Sc. (University of Bombay) Eight Research Papers on Analytical Chemistry: *J. Indian Inst. Sci.*, Vol. 7A, pp. 105—112; Vol. 7A, pp. 141—151; Vol. 8A, pp. 115—122. *J. Liv. St. & Agri. India*, 1935, V, pp. 480—488; 1935, V, pp. 382—388; 1936, VI, pp. 154—160. *J. Indian Chem. Soc.*, 1936, XIII, p. 545. *Ind. J. Veter. Sci.*, 1937, VI (March issue). (*Signed by*) N. Brodie.

SUSZKO, JERZY, Poznań/Poland/, ul. Grunwaldzka 14. Polish. Professor of Organic Chemistry, University Poznań. Engineer of Chemistry, Doctor of Technical Sciences; both degrees obtained in Deutsche Technische Hochschule, Prag/German Technical University in Prague. Member of the Polskie Towarzystwo Chemiczne (Polish Chemical Society) of Deutsche Chemische Gesellschaft, of Société Chimique de France, of Nederlandsche Chemische Vereeniging, and of the American Chemical Society. Published over 50 papers, with several collaborators, on various topics of organic chemistry, e.g. on coloured hydrocarbons, on alkaloids of Cinchona, studies in stereochemistry, etc., in *Bulletin Internat. de l'Acad. Polon.*, *Roczniki Chemii*, *Berichte der deutschen chem. Ges.*, and *Recueil trav. chim. Pays.-Bas.* (Signed by) Osman Achmatowicz.

ADDITIONS TO THE LIBRARY.

I. Donations.

BRITISH DRUG HOUSES, LTD., and HOPKIN & WILLIAMS, LTD. "Analar" standards for laboratory chemicals. 2nd edition. London 1937. pp. xx + 296. (Two copies.)

From the Directors.

EVANS, P., and REID, A. Drilling mud: its manufacture and testing. (From the *Trans. Min. Geol. Inst., India*, 1936, 32.) pp. 263 + xxx. ill. 19s. 6d. (Recd. 22/3/37.) From the Publishers: Mining and Geological Society of India.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Bulletin No. 5. Le fer-blanc et les conserves en France. London 1937. pp. 94. ill. (Reference.)

From the Director.

JONES, OSMAN, and JONES, T. W. Canning practice and control. London 1937. pp. xii + 254. ill. 25s. net. (Recd. 15/4/37.)

From the Authors.

MENSCHUTKIN, B. N. The work of M. W. Lomonossow on physics and chemistry. Moscow 1936. pp. 537. ill. [In Russian.] (Recd. 22/3/37.)

From the Author.

PLOTNIKOV, V., SHEKA, I., and YANKELEVICH, Z. The electrolytic precipitation of metals from non-aqueous solutions. Kiev 1936. pp. 152. ill. [In Russian.] (Recd. 14/4/37.)

RUDORF, GEORGE. Das Periodische System, seine Geschichte und Bedeutung für die chemische Systematik. German edition, enlarged and revised. Translated by the Author in collaboration with HANS RIESENFELD. Hamburg 1904. pp. xvi + 370. ill. (Reference.)

From the Author.

SIEGEL, W. Die Verfahren der anorganisch-chemischen Industrie. Vol. II. Berichtsjahr 1935. Berlin 1937. pp. xvi + 591. ill. (Reference.)

From the Author.

II. By purchase.

AMERICAN SOCIETY FOR TESTING MATERIALS. Methods of chemical analyses of metals. Philadelphia 1936. pp. vi + 254. ill. (Reference.) \$2.50.

EVANS, ULICK R. Metallic corrosion, passivity and protection. London 1937. pp. xxiv + 720. ill. 45s. net. (Recd. 15/4/37.)

HOLMES, ERIC. The metabolism of living tissues. Cambridge 1937. pp. xii + 235. 7s. 6d. net. (Recd. 15/4/37.)

HOPKINS, EDWARD S. Water purification control. [2nd edition. Baltimore] 1936. pp. x + 184. ill. \$1.75. (Recd. 15/4/37.)

HOPKINS, R. H., and KRAUSE, B. Biochemistry applied to malting and brewing. London 1937. pp. 342. 12s. 6d. net. (Recd. 15/4/37.)

INDIA RUBBER WORLD. Compounding ingredients for rubber. New York 1936. pp. 225. (Reference.) \$2.50.

KEENAN, JOSEPH H., and KEYES, FREDERICK G. Thermodynamic properties of steam, including data for the liquid and solid phases. New York 1936. pp. 89. ill. (Reference.) \$2.75.

LANDSTEINER, KARL. The specificity of serological reactions. Springfield 1936. pp. viii + 178. \$4. (Recd. 15/4/37.)

LOWRY, T. M., and CAVELL, A. C. Intermediate chemistry. London 1936. pp. xvi + 879. ill. 12s. 6d. net. (Recd. 15/4/37.)

MARTINDALE, [W. H.] The extra pharmacopœia. 21st edition. Vol. I. Published by direction of the Pharmaceutical Society of Great Britain. London 1936. pp. xxxvi + 182. (Reference.) 27s. 6d. net.

ROSE, SIR THOMAS KIRKE, and NEWMAN, W. A. C. The metallurgy of gold. 7th edition. London 1937. pp. xiv + 561. ill. 36s. net. (Recd. 15/4/37.)

SHERMAN, HENRY C. Chemistry of food and nutrition. 5th edition. New York 1937. pp. xii + 640. ill. \$3. (Recd. 15/4/37.)

SHERWOOD, THOMAS K. Absorption and extraction. New York 1937. pp. viii + 278. ill. \$3.50. (Recd. 15/4/37.)

SISCO, FRANK T. The alloys of iron and carbon. Vol. II. Properties. New York 1937. pp. xiv + 777. ill. \$8. (Recd. 19/3/37.)

TONGEREN, W. VAN. Gravimetric analysis : a laboratory manual with special reference to the analysis of natural minerals and rocks. Amsterdam 1937. pp. xii + 278. ill. 14s. net. (*Recd.* 15/4/37.)

WOHRYZEK, OSKAR. Die aktivierten Entfärbungskohlen. Ein Wegweiser für die Praxis. (Sammlung, N.F. Heft 36.) Stuttgart 1937. pp. 99. ill. (*Reference.*)

WOKES, FRANK. Text book of applied biochemistry. London 1937. pp. x + 522. ill. 15s. net. (*Recd.* 15/4/37.)

YOE, JOHN H. Chemical principles, with particular application to qualitative analysis. New York 1937. pp. x + 311. ill. \$2.75. (*Recd.* 15/4/37.)

III. Pamphlets.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Building Research*. Special Report No. 25. The use of asphalt mastic for roofing. By C. M. WATKINS and C. M. GOUGH. London 1937. pp. viii + 40. ill.

HIGINBOTHAM, H. The industrial application of colloidal graphite. (From the *Trans. Liverpool Eng. Soc.*, 1935, 56.)

HOME OFFICE. *Air Raid Precautions Department*. Circulars to County Councils, etc. London 1935+.

HOME OFFICE. *Air Raid Precautions Department*. Handbooks. Nos. 1, 2 (2nd edition), 4, 6, 7 (2nd edition). London 1936—37.

— — — Memorandums. Nos. 1 (2nd edition), 2 (2nd edition), 3. London 1936.

INDIAN LAC RESEARCH INSTITUTE. Bulletin No. 23. Some simple methods of reducing the damage done by insect enemies to the lac crops. By P. M. GLOVER. Calcutta 1936. pp. 4.

— — — Bulletin No. 25. Use of the quinhydrone and antimony electrodes for potentiometric titrations of resin solution. By N. N. MURTY, H. WEINBERGER, and W. H. GARDNER. Calcutta 1936. pp. 4. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Gas defence from the point of view of the chemist. By J. DAVIDSON PRATT. London 1937. pp. 24.

— — — Oxidation-reduction potentials and their applications. By SAMUEL GLASSTONE. London 1937. pp. 28.

MINES DEPARTMENT. *Safety in Mines Research Board*. Paper No. 97. The effect of fibre cores on internal corrosion in colliery winding ropes. By J. E. O. MAYNE. London 1937. pp. 38. ill.

WAR OFFICE. Defence against gas. London 1935. pp. viii + 83. ill.

FORTHCOMING MEETINGS OUTSIDE LONDON.*NEWCASTLE AND DURHAM.*

Fellows are invited to attend the following Bedson Lecture to be held in the Chemistry Lecture Theatre, Armstrong College :

Friday, May 21st, 1937, at 6.30 p.m. Lecture on " Chemistry in Food Production,"
by Sir John Russell, O.B.E., D.Sc., F.R.S.

FORTHCOMING MEETINGS IN LONDON.

Thursday, May 6th, 1937, at 8 p.m.

Ordinary Scientific Meeting. The following papers will be read :

"The oxidation of some polyhydroxylic and polyethylenic higher fatty acids by aqueous alkaline permanganate solutions." By T. G. Green and T. P. Hilditch.

"Formaldehyde condensations with aliphatic ketones. Part II. Methyl ethyl ketone." By Sir Gilbert T. Morgan and C. F. Griffith.

"Liquid phase reactions at high pressures. Part I. Hydrolysis of esters and the Knoevenagel reaction." By D. M. Newitt, R. P. Linstead, R. H. Sapiro, and E. J. Boorman.

Thursday, May 20th, 1937, at 8 p.m.

Discussion on "Synthesis and Stereochemistry of Condensed Alicyclic Systems," to be opened by Dr. R. P. Linstead.

Thursday, June 3rd, 1937, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, June 10th, 1937.

Visit to Rothamsted Experimental Station, Harpenden, Herts. (Further particulars will be announced later.)

ERRATUM.

Page 26, lines 8 and 11, for "Curtius" read "Curtis."

P R O C E E D I N G S
O F T H E
C H E M I C A L S O C I E T Y .

Extra Meeting, Thursday, April 29th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

Among the visitors welcomed by the President were Professor Dr. F. Epstein, Frau Else Freyhan, Dr. Robert Freyhan, Dr. E. Friedländer, Miss Eva Haber, Dr. Hermann Haber, Mr. Ludwig Haber, Mrs. Marguerite Haber, and Sir Frederick Keeble.

The PRESIDENT referred to the distinguished career of Professor Fritz Haber and then called on Professor J. E. Coates to deliver the Haber Memorial Lecture.

At the conclusion of the lecture, Professor A. J. Allmand proposed a vote of thanks to Professor Coates. This was seconded by Mr. R. Le Rossignol, supported by the President, and carried with acclamation, the Lecturer making brief acknowledgment.

Ordinary Scientific Meeting, Thursday, May 6th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society through death on April 22nd, 1937, of Frederick Valentine Ramsden, who was elected a Fellow in 1910.

It was announced :—

1. That the following address to H.M. The King, drawn up by the Chemical Council, had been sealed and signed :—

T O H I S M O S T G R A C I O U S M A J E S T Y K I N G G E O R G E V I .

May it please Your Majesty—

The President, Council and Fellows of The Chemical Society (Incorporated by Royal Charter, 1848)

The President, Council, Fellows and Associates of The Institute of Chemistry of Great Britain and Ireland (incorporated by Royal Charter, 1885)

The President, Council and Members of The Society of Chemical Industry (Incorporated by Royal Charter, 1907)

Your Majesty's loyal and dutiful subjects

Present their humble duty to Your Majesty and their faithful allegiance to your Throne and Person and unite in offering their wholehearted congratulations on the occasion of The Coronation of Your Most Gracious Majesty and Her Most Gracious Majesty Queen Elizabeth.

The Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry,—representing those of Your Majesty's Subjects who are devoted to the profession, practice and applications of Chemistry in its manifold branches and spheres of work,—recognise with gratitude the interest in the progress of science shown by Your Majesty at all times.

On this felicitous occasion the three Chartered Organisations desire to express the fervent prayer that Your Majesty, with the loving help of Her Majesty the Queen, may be vouchsafed long life to reign over a prosperous and united people.

Signed and sealed for and on behalf of The Chemical Society

F. G. DONNAN.	<i>President.</i>
EMILE MOND.	<i>Honorary Treasurer.</i>
H. J. T. ELLINGHAM.	} <i>Honorary Secretaries.</i>
J. W. COOK.	
C. W. DAVIES.	

Signed and sealed for and on behalf of The Institute of Chemistry of Great Britain and Ireland

ROBERT H. PICKARD.	<i>President.</i>
BERNARD F. HOWARD.	<i>Honorary Treasurer.</i>
RICHARD B. PILCHER.	<i>Registrar and Secretary.</i>

Signed and sealed for and on behalf of The Society of Chemical Industry

LEVERHULME.	<i>President.</i>
LESLIE H. LAMPITT.	<i>Honorary Treasurer.</i>
H. J. POOLEY.	<i>General Secretary.</i>

2. That the following Committees for 1937—1938 had been appointed by the Council :

Finance and General Purposes Committee.

E. F. Armstrong, W. A. S. Calder, F. H. Carr, C. S. Gibson, C. K. Ingold, Sir Gilbert Morgan, J. C. Philip, Sir William J. Pope, together with the Officers, the Chairman of the Publication Committee and the representative of the Joint Library Committee on the Council of the Chemical Society. The President as Chairman, Treasurer as Vice-Chairman, and the Assistant Secretary as Secretary.

Publication Committee.

G. R. Clemo, G. I. Finch, S. Glasstone, C. F. Goodeve, D. Ll. Hammick, C. R. Harington, T. P. Hilditch, C. N. Hinshelwood, E. L. Hirst, C. K. Ingold, J. Kendall, H. King, G. A. R. Kon, R. P. Linstead, T. S. Moore (Chairman), Sir Gilbert Morgan, R. G. W. Norrish, E. K. Rideal, J. M. Robertson, R. Robinson, R. Robison, N. V. Sidgwick, T. W. J. Taylor, E. E. Turner, W. Wardlaw, H. B. Watson, J. H. Wolfenden, together with the Officers, and the Editor (as Secretary).

Research Fund Committee.

F. Francis, W. N. Haworth, W. H. Mills, T. S. Moore, J. C. Philip, R. E. Slade, S. Smiles, J. F. Thorpe, R. Whytlaw-Gray, and the Officers. The President as Chairman and the Assistant Secretary as Secretary.

Library Exchange Committee.

A. C. G. Egerton, T. A. Henry, H. J. Emeléus, E. E. Turner, together with Dr. O. L. Brady (*ex-officio*, as the representative of the Joint Library Committee on the Council) and the Officers, with the Librarian as Secretary.

3. That the Society had been granted ten seats in Government Stands for the Coronation Procession on May 12th, 1937. These were allotted to Fellows on the basis of the ballot.

Messrs. C. F. Goodeve and A. G. Maddock were formally admitted Fellows of the Society.

Forms of Recommendation were read for the first time in favour of :

Harold France, B.Sc., Department of Chemistry, The University, Manchester, 13.
Leon Golberg, M.Sc., Exeter College, Oxford.
Suvan D. Vadhana, B.S., 1142, E. Catherine Street, Ann Arbor, Michigan, U.S.A.

Forms of Recommendation were read for the second time in favour of fourteen candidates, and for the third time in favour of 38 candidates.

Mrs. M. J. Farmer and Mr. T. M. Sharp were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected as Fellows :

Charles Laurence Arcus, B.Sc.	Vernon Harold Howard, B.Sc.
George Bernard Beaman, B.Sc.	William John Howells, M.Sc.
Frank Raymond Bradbury, B.Pharm., B.Sc., Ph.C.	Kalya Isarasena, B.A.
Albert Victor Brancker, B.Sc.	Eileen Constance Jordan.
Arthur Michell Breach.	Ahmad Kamal, M.Sc.
Norman Cooper Brown.	William Alfred La Lande, M.S., Ph.D.
Joseph Chatt.	Max Lamchen, M.Sc.
Neoh Thean Chye.	Norman Heyworth Law, M.Sc., A.I.C.
George Honor Clement, A.I.C.	Assur Giessing Oppegaard, Dipl. Ing.
John Critchlow, B.Sc.	George Stanley Smith, B.Sc., A.I.C.
George Harry Dazeley, B.A.	Harry James Eric Smith.
Hans Dohse, (Dr.).	Soli Dosabhai Sunawala, M.Sc.
Vladimir Dvorkovitz, B.Sc.	Jerzy Suszko, Prof., (Dr.).
Joseph Lewis Edgar, B.Sc., A.R.C.S.	Stanley Lewis Sheldon Thomas, B.Sc., A.R.C.S.
Roderick Falconer, B.Sc.	John Tyson Tyson, A.R.C.S.
Thomas William Gibling, B.A., B.Sc.	Charles Henry Vasey.
Neil E. Gordon, Prof., Ph.B., A.M., Ph.D.	Theodore White, B.Sc.
Cyril John Williams Hooper, Ph.D., A.R.C.S., D.I.C.	Frank George Young, Ph.D.

The following papers were read :—

- “The oxidation of some polyhydroxylic and polyethylenic higher fatty acids by aqueous alkaline permanganate solutions.” By T. G. GREEN and T. P. HILDITCH.
- “Formaldehyde condensations with aliphatic ketones. Part II. Methyl ethyl ketone.” By SIR GILBERT T. MORGAN and C. F. GRIFFITH.
- “Liquid phase reactions at high pressures. Part I. Hydrolysis of esters and the Knoevenagel reaction.” By D. M. NEWITT, R. P. LINSTAD, R. H. SAPIRO, and E. J. BOORMAN.

Ordinary Scientific Meeting, Thursday, May 20th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society through the deaths of the following Fellows :

	Elected.	Died.
Thomas Cockerill	1892	9th May, 1937.
Walter S. Crocker	1901	4th May, 1937.

It was announced :

1. That the congratulations of the Society had been conveyed to the following, whose names were in the List of Coronation Honours :

Baronet : Sir David Milne-Watson.

Knight Bachelor : Dr. Robert H. Pickard, F.R.S.

Companion of the Order of the Indian Empire : Lieut.-Col. Clive Newcomb, I.M.S.

Companion of the Imperial Service Order : Andrew More.

Member of the Order of the British Empire : John Watson Napier.

2. That the congratulations of the Society had also been conveyed to Mr. D. Lloyd Howard and to Mr. Leonard O. Simmons, who completed 50 years of Fellowship on April 21st, 1937.

3. That the Council had accepted with regret the resignation of Mr. D. Ll. Hammick from the office of Local Representative for Oxford, and had appointed Mr. R. P. Bell to this office.

4. That the Council had appointed Dr. R. J. W. Le Fèvre as an Ordinary Member of Council (Town Member) until the next Annual General Meeting on the retirement of

Professor G. Ingle Finch from this office in July 1937, owing to his acceptance of the Fondation Francqui Chair at Brussels during the next academic year.

5. That the Council had appointed Dr. R. A. Morton as a Member of the Publication Committee to fill the vacancy caused by the retirement of Professor G. Ingle Finch from this office.

Mr. F. R. Bradbury was formally admitted a Fellow of the Chemical Society.

A Form of Recommendation was read for the first time in favour of :

Harry Tacon Openshaw, B.A., B.Sc., Magdalen College, Oxford.

and also Forms of the following, whose applications have been accepted by the Council under Bye-Law I (2) :

Sudhir Kunar Ghose, M.B., D.T.M., 23/1, Behiatola Street, P.O. Hathcola, Calcutta.

Kendall Morgan Madigan, 231, Macquarie Street, Sydney, N.S.W.

Har Swarup Singhal, L.M.P., E.I. Railway Hospital, Barabanki, U.P., India.

Forms of Recommendation were read for the second time in favour of two candidates, and also of the following, whose application has been accepted by the Council under Bye-Law I (2) :

Suvan Thaya Vadhana, B.S., 1142, E. Catherine Street, Ann Arbor, Michigan, U.S.A.

A Discussion on "Synthesis and Stereochemistry of Condensed Alicyclic Systems" was opened by Dr. R. P. Linstead, and continued by Dr. J. Walker, Professor J. L. Simonsen, Mr. J. D. Bernal, Professor J. W. Cook, Mr. F. J. McQuillin, and Dr. G. A. R. Kon.

RESEARCH FUND.

The Council has decided that in future the Research Fund Committee shall meet in November, instead of December. All persons, therefore, who have received grants, and whose accounts have not been declared closed by the Council, are informed that reports must be received by the Society not later than Monday, November 1st, 1937.

Applications for grants, to be made on forms obtainable from the Assistant Secretary, must be received on or before Monday, November 1st, 1937. Applications from Fellows will receive prior consideration.

Attention is drawn to the fact that the income arising from the Donation of the Worshipful Company of Goldsmiths is principally devoted to the encouragement of research in Inorganic and Metallurgical Chemistry, and that the income from the Perkin Memorial Fund is to be applied to investigations relating to problems connected with the Coal Tar and Allied Industries.

VAN 'T HOFF FUND FOR THE ENDOWMENT OF RESEARCH IN PURE AND APPLIED CHEMISTRY.

A communication has been received from the Committee of the Van 't Hoff Fund for the endowment of research in pure and applied chemistry. The amount from this fund available for distribution during 1938 is about 1200 Dutch guilders.

A Committee consisting of Professor A. F. Holleman (President), Professor F. M. Jaeger, Professor A. Smits, and Professor J. P. Wibaut (Secretary), has been appointed to award grants. Applications should be sent before November 1st, 1937, by registered post to :

"Het Bestuur der Koninklijke Academie van Wetenschappen, bestemd voor de Commissie van het Van 't Hoff-fonds, Trippenhuis, Kloveniersburgwal, Amsterdam."

Every applicant is requested to submit a detailed account of the manner in which he proposes to expend the grant and to state the reasons for which he makes his application. Papers embodying the results of the research may be published in any journal, but acknowledgment must be made of the source of the grant. Copies of papers containing the results of the research must be forwarded to the Committee.

BOARD OF TRADE.

Key Industry Duty.

Representation has been made to the Board of Trade regarding the exemption of Myristic acid from the duty imposed by the Safeguarding of Industries Act, 1921. Communications should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W. 1 before June 4th, 1937.

Representation has also been made regarding exemption of Hydroxy ethyl cellulose, and communications with reference to this should be addressed to the above before June 6th, 1937.

ANNUAL GENERAL MEETING OF THE GESELLSCHAFT FÜR KORROSIONSFORSCHUNG UND WERKSTOFFSCHUTZ IM VDCh.

The Annual General Meeting of the Gesellschaft für Korrosionsforschung und Werkstoffschutz im VDCh will be held on July 5th, 1937, on the occasion of the National Congress of German Chemists, which this year is being convened at Frankfurt-on-Main during the Achema VIII Chemical Engineering Exhibition. The meeting will be held jointly with the Annual General Meeting of the Dechema Deutsche Gesellschaft für chemisches Apparatewesen. The principal subject to be dealt with at this meeting is "Resistance and Protection of Construction Materials in Chemical Engineering."

VÈ CONGRÈS INTERNATIONAL TECHNIQUE ET CHIMIQUE DES INDUSTRIES AGRICOLES.

Scheveningen, July 12th to 17th, 1937.

The Fifth International Technical and Chemical Congress of Agricultural Industries will be held at Scheveningen (Holland) from July 12th to 17th, 1937. The following is an extract from the programme of the various subjects which are to be discussed at the Congress.

DIVISION I. GENERAL.

Biological Assay of Vitamins.
Standardisation of Methods of Analysis.

DIVISION II. AGRICULTURE.

Drying and Preservation of Forage Plants.
Diseases of Plants. Protection against Diseases. Influence of Secondary Elements on the Production and the Healthy Condition of Plants used in Industry.

DIVISION III. INDUSTRIAL.

Physico-chemical Phenomena in the Extraction of Sugar Juices.
The Crystallisation of Sugar in the Sugar Factory from the Scientific, Technical, and Practical Points of View.
Utilisation of Steam in Sugar Refining.
Use of New Materials for the Construction of Plant in Sugar Factories and Distilleries.
Production in Distilleries.
Stability of Beers.

Varieties of Wheat and Methods for Estimating their Quality from the Point of View of their Use in making Flour and Bread. Importance of the Use of Bye-Products as Fodder.

Preservation of Fruit and Vegetables, especially during Transport. Standardisation of Methods of Packing.

DIVISION IV. ECONOMIC.

Measures taken in Various Countries and Measures to be taken in Contending with Over-production and Under-production of the Tropical Products of the Agricultural Industries.

Power Alcohol.

A programme (in English) giving full particulars of the Congress can be obtained from the Honorary Secretary, Dr. Ing. J. P. Dudok van Heel, "De Rietkraag," Naarden, Holland.

List of papers, or abstracts thereof, received between April 15th and May 20th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- "The crystalline structure of the sugars. Part IV. Pentaerythritol and the hydroxyl bond." By F. J. LEWELLYN, E. G. COX, and T. H. GOODWIN.
- "Addition of hydrogen bromide to non-terminal double bonds. Effect of the alkyl group." By E. P. ABRAHAM, E. L. R. MOWAT, and J. C. SMITH.
- "The benzylation of aromatic amines. Part V. The reactions between *o*-, *m*-, and *p*-cyanobenzyl chlorides and aniline, monoethylaniline, and dimethylaniline." By D. H. PEACOCK and P. THA.
- "The liquid acids of Sapucainha oil." By H. PAGET.
- "Synthesis of *meso*-benzanthrones and anthanthrones by the Ullmann method." By H. G. RULE and F. R. SMITH.
- "The structure of germanous iodide." By H. M. POWELL and F. M. BREWER.
- "Studies in stereochemical structure. Part VIII. The stereochemical relationship of the α - and β -forms of substituted hydrobenzoin. (*a*) Ethylhydrobenzoin (α -form)." By R. ROGER.
- "Syntheses in the phenanthrene series. Part VII. 5:9-Dimethoxy- and 5-methoxy-1-methylphenanthrene." By P. HILL, W. F. SHORT, and H. STROMBERG.
- "Mechanism of substitution at a saturated carbon atom. Part VII. Hydrolysis of isopropyl halides." By E. D. HUGHES and U. G. SHAPIRO.
- "Mechanism of substitution at a saturated carbon atom. Part VIII. Hydrolysis of *tert*-butyl halides." By K. A. COOPER and E. D. HUGHES.
- "Mechanism of substitution at a saturated carbon atom. Part IX. The rôle of the solvent in the unimolecular hydrolysis of alkyl halides." By L. C. BATEMAN and E. D. HUGHES.
- "Mechanism of substitution at a saturated carbon atom. Part X. Hydrolysis of β -*n*-octyl bromide." By E. D. HUGHES and U. G. SHAPIRO.
- "Reaction kinetics and the Walden inversion. Part I. Homogeneous hydrolysis and alcoholysis of β -*n*-octyl halides." By E. D. HUGHES, C. K. INGOLD, and S. MASTERMAN.
- "Reaction kinetics and the Walden inversion. Part II. Homogeneous hydrolysis, alcoholysis, and ammonolysis of α -phenylethyl halides." By E. D. HUGHES, C. K. INGOLD, and A. D. SCOTT.
- "Reaction kinetics and the Walden inversion. Part III. Homogeneous hydrolysis and alcoholysis of α -bromopropionic acid, its ester and anion." By W. A. COWDREY, E. D. HUGHES, and C. K. INGOLD.
- "Reaction kinetics and the Walden inversion. Part IV. Action of silver salts in hydroxylic solvents on β -*n*-octyl bromide and α -phenylethyl chloride." By E. D. HUGHES, C. K. INGOLD, and S. MASTERMAN.

- “ Reaction kinetics and the Walden inversion. Part V. Action of silver salts in hydroxylic solvents on α -bromopropionic acid, its methyl ester and sodium salt.” By W. A. COWDREY, E. D. HUGHES, and C. K. INGOLD.
- “ Reaction kinetics and the Walden inversion. Part VI. Relation of steric orientation to mechanism in substitutions involving halogen atoms and simple or substituted hydroxyl groups.” By W. A. COWDREY, E. D. HUGHES, C. K. INGOLD, S. MASTERMAN, and A. D. SCOTT.
- “ The mechanism of elimination reactions. Part I. Unimolecular olefin formation from alkyl halides in sulphur dioxide and formic acid.” By E. D. HUGHES, C. K. INGOLD, and A. D. SCOTT.
- “ The mechanism of elimination reactions. Part II. Unimolecular olefin formation from *sec.*-octyl halides in aqueous alcohol. A new criterion of mechanism.” By E. D. HUGHES, C. K. INGOLD, and U. G. SHAPIRO.
- “ The mechanism of elimination reactions. Part III. Unimolecular olefin formation from *tert.*-butyl halides in acid and alkaline aqueous solutions.” By K. A. COOPER, E. D. HUGHES, and C. K. INGOLD.
- “ The mechanism of elimination reactions. Part IV. Unimolecular olefin formation from *tert.*-amyl halides in acid and alkaline aqueous solutions, and some remarks on the scope of the unimolecular mechanism.” By E. D. HUGHES and B. J. MACNULTY.
- “ Some substituted phenyl- and benzyl-thiazolium salts.” By KARIMULLAH.
- “ The action of bases on nitrophenylhydrazines. Part II.” By A. K. MACBETH and J. R. PRICE.
- “ Constitution of the glucoside butin isolated from *Butea Frondosa* flowers. Part. I.” By J. B. LAL.
- “ Catalytic toxicity and chemical structure. Part II. The influence of chain length in the alkyl sulphide and mercaptan series.” By E. B. MAXTED and H. C. EVANS.
- “ The rearrangement of *ortho*-hydroxy-sulphones. Part VI.” By C. S. McCLEMENT and S. SMILES.
- “ The diffusion coefficient of methane and air.” By H. F. COWARD and E. H. M. GEORGE-SON.
- “ ‘ Green ’ ethyl tartrate.” By T. S. PATTERSON and A. H. LAMBERTON.
- “ The lupin alkaloids. Part XII. The synthesis of *dl*-lupinine and *dl*-isolupinine.” By G. R. CLEMO, W. MCG. MORGAN, and R. RAPER.
- “ The solubility of lithium chloride in water between 70° and 160°.” By J. N. FRIEND, R. W. HALE, and S. RYDER.
- “ Studies in dielectric polarisation. Part I. The polarisations of nitrobenzene and chlorobenzene in certain ethers.” By G. THOMSON.
- “ Studies in dielectric polarisation. Part II. “ Positive ” solvent effect of butyl and amyl ethers.” By G. THOMSON.
- “ The three-component systems composed of cobalt chloride and water with either calcium, strontium, or thorium chloride.” By H. BASSETT, H. F. GORDON, and J. H. HENSHALL.
- “ The spectrum and molecular structure of carbon suboxide and evidence for hybrid links.” By H. W. THOMPSON and J. W. LINNETT.
- “ The structure of naphthalene, hydrindene, and tetralin derivatives.” By (Miss) N. McLEISH and N. CAMPBELL.
- “ Fused carbon rings. Part XII. A simple synthesis of derivatives of decalin from *cyclo*-hexanone, and observations on *cyclo*hexane *spiro*-butyrolactone and allied compounds.” By R. P. LINSTEAD, A. B. WANG, J. H. WILLIAMS, and (in part) K. D. ERRINGTON.
- “ Fused carbon rings. Part XIII. Synthesis of derivatives of decalin containing an angular methyl group.” By R. P. LINSTEAD, A. F. MILLIDGE, and A. L. WALPOLE.
- “ Dehydrogenation. Part I. The catalytic dehydrogenation of hydronaphthalenes with and without an angular methyl group.” By R. P. LINSTEAD, A. F. MILLIDGE, S. L. S. THOMAS, and A. L. WALPOLE.
- “ The nature of the solid carbon-oxygen complex. Part I. The oxidative action of graphitic oxide and active carbon plus oxygen on some aromatic amines.” By A. H. CARTER, L. DE V. MOULDS, and H. L. RILEY.

- "Rearrangement of the alkylanilines. Part VIII. Migration of large groups." By W. J. HICKINBOTTOM.
- "The associating effect of the hydrogen atom. Part I. Amides and sulphonamides." By H. O. CHAPLIN and L. HUNTER.
- "Strychnine and brucine. Part XXXVI. Preliminary synthetical experiments." By H. T. OPENSHAW and R. ROBINSON.
- "Studies in tar hydrocarbons. Part I. Reduction products of pyrene." By E. A. COULSON.
- "Complex fluorides of gallium and the alkali metals." By W. PUGH.
- "The retardation of chemical reactions. Part VII. The reaction between potassium permanganate and hydrogen peroxide in acid solution." By K. C. BAILEY and G. T. TAYLOR.
- "Chemical constitution and the dissociation constants of monocarboxylic acids. Part VI. (a) The polarity of the vinyl and phenyl groups, and (b) an apparent linear relationship between dissociation constants and dipole moments." By J. F. J. DIPPY and R. H. LEWIS.
- "Combination of fatty acids with nitrogen bases. Part IV. Diethylamine and propionic acid: densities, surface tensions, conductivities, and viscosities of liquid anhydrous system." By R. N. COLEMAN and E. B. R. PRIDEAUX.
- "The carbonyl constituents of eucalyptus oils. Part I. The occurrence of cryptal." By P. A. BERRY, A. K. MACBETH, and T. B. SWANSON.
- "The absorption spectrum of solid anhydrous cobalt chloride." By O. R. HOWELL and A. JACKSON.
- "The available surface of cellulose." By O. R. HOWELL and A. JACKSON.
- "4-Chloro-6-ethoxy-2-methylquinoline." By O. G. BACKEBERG.
- "The kinetics of the decomposition of carbonyl selenide on an allotropic selenium surface." By R. H. PURCELL and M. H. ZAHOORBUX.
- "Note on the polymorphism of chalkone." By R. J. W. LE FÈVRE.
- "The moments of coumarin and its 3-phenyl derivatives and of certain substituted γ -pyrones." By (Mrs.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.
- "The characterisation of basseol, a tetracyclic triterpene alcohol, and its isomerisation to β -amyrenol." By J. H. BEYNON, I. M. HEILBRON, and F. S. SPRING.
- "Some observations on colloidal solutions of silver and copper." By H. FREUNDLICH and (Miss) D. STEINER.
- "A synthesis of 5:6:7:8-tetrahydrophenanthridine and its derivatives." By J. KENNER, W. H. RITCHIE, and F. S. STATHAM.
- "Volumetric determination of semicarbazide and aminoguanidine." By G. S. SMITH.

FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, JUNE 3rd, 1937.

BATES, GEOFFREY GORDON, 95, Highbury Hill, N. 5. British. Pharmaceutical Chemist. Pharmaceutical Chemist Qualification of the Pharmaceutical Society of Great Britain. Being employed by a manufacturing firm and interested in chemistry, I wish to attend meetings and receive publications of the Society. (*Signed by*) R. W. West, W. Gerrard, D. H. Richardson.

CARSON, CYRIL, 51, Broxash Road, Clapham Common, S.W. 11. British. Pharmacist. Late student, School of Pharmacy, University of London. Member of the Pharmaceutical Society. (*Signed by*) A. Houston, T. Heap, P. H. Woodnoth.

CLAREMONT, CLAUDE LEOPOLD LESZYNSKI, 148, Rosendale Road, West Dulwich, S.E. 21. British. Analytical Chemist, Director of The Rodent & Insect Pest Destruction Co., Ltd. B.Sc. (London), F.I.C. Engaged in Analytical Chemistry 1905-1922, since as above. Author of paper in *The Analyst*, "Notes on the Analysis and Use of Red Squill in Rat Poisons" (1922). Author of "A Practical Handbook on Rat Destruction." (*Signed by*) H. E. Cox, J. F. H. Gilbard, George Taylor.

FRANCE, HAROLD, c/o 12, Bracken Hill, Mirfield, Yorkshire. British. Research Student. B.Sc. (1st Class Hons.), Glasgow. One year's research at Glasgow University under Dr. S. H. Tucker in Organic Chemistry; now pursuing organic chemical research under Prof. Heilbron and Dr. D. H. Hey at Manchester University. Date of birth 4th June, 1912. (*Signed by*) D. H. Hey, G. N. Burkhardt, E. C. Butterworth, W. E. Jones, H. Jackson, E. R. H. Jones.

GARDNER, ERIC RICHARD, 6, Diamond Terrace, Greenwich, S.E. 10. British. Research Student. B.Sc. (1st Class Hons.) (subject to further year's work); A.R.C.S., Royal College of Science, University of London. Date of birth 29th Feb., 1916. (*Signed by*) James C. Philip, H. J. Emeléus, J. S. Anderson.

GOLBERG, LEON, 11, Medusa Street, Kensington, Johannesburg, South Africa. British. Research Student. M.Sc. (University of the Witwatersrand). Temporary Assistant in Physical Chemistry (1935), Witwatersrand University; Junior Lecturer in Mathematics (1936), Witwatersrand University; Research Student, Oxford (1937). Date of birth 22nd Aug., 1915. (*Signed by*) Robert Robinson, J. H. Wolfenden, J. C. Smith.

INGLESENT, HAROLD, Lea Holme, Archer Park, Middleton, Manchester. English. Chemist (Works). Fellow of Royal Microscopical Society. Certificate, Bacteriology of Food, Manchester College of Technology. (*Signed by*) James Porter Shenton, Frederick Owen, B. G. Hough.

ISRAEL, ROBERT GORDON, 15, Widecombe Way, N. 2. British. Consultant Chemist. Ph.D. (Berlin). British Patent Specifications No. 448,622 (Production of semi-coke and coke), No. 455,558 (Coke by carbonising coal-oil mixtures), No. 451,575 (Olefine gases). *Trans. of the Institution of Chemical Engineers*, 1931, **9**, 36-39, "On the Recovery of Gum from Fossil Kauri Timber." (*Signed by*) H. Freundlich, T. Cohn, C. K. Ingold.

LAEUGER, PAUL, Wenkenhaldenweg 12, Riehen near Basle (Switzerland). Swiss. Director. Ph.D., University of Basle. Head of the Scientific Department of J. R. Geigy S.A., Bâle, Switzerland. (*Signed by*) Frederick M. Rowe, Arnold T. Peters, H. Burton, J. W. Baker, E. Rothstein.

MARTIN, DENNIS ARTHUR SYDNEY, 35, Larpent Avenue, Putney, S.W. 15. British. Works Chemist. Six years as Works Chemist in Dyeworks. Two years as Chief Chemist in firm manufacturing various chemicals, including two textile finishing compounds of my own. (*Signed by*) L. R. Hart, J. A. C. Flohren, T. McLachlan.

MUMFORD, HENRY ATTWOOD, Calfont Court, Baker Street, N.W. 1. British. Director, Mumford & Co., Ltd., Hove, Sussex, Pharmaceutical Chemists. Adviser to Tell & Co. (Pharmaceutical Manufacturers) Ltd., Privale. Desires to receive the publications of the Society, to attend the meetings, and to use the Library. (*Signed by*) F. W. Crossley-Holland, J. Macvie Hill, H. R. Napp.

ONO, KASHICHI, The Nippon Koryo Yakuhin Kaisha, Ltd., Wakihamacho 3-chome, Fukiaku, Kobe, Japan. Japanese. Managing Director of Nippon Koryo Yakuhin Kaisha, Ltd. Director and Consulting Chemist of Saisei Shono Kaisha, Ltd. Director of Yazawa Menthol Company. Rigaku Hakushi (Dr. of Science), obtained at Imperial University, Sendai, Japan. Leading Chemical Scientist of Camphor Oil in Japan, and has past experience in Technical College and Pharmaceutical College, Osaka, Japan. "On the Electrolytic Preparations of Naphthalene," *J.C.S.*, 1921, **120**, i, 334, 720; 1922, **122**, i, 1088. "Studies on Camphor Oil," 1923, **124**, i, 1022; 1924, **126**, i, 657; 1925, **128**, i, 941, 1437; *Brit. Chem. Abs.*, 1927, **A**, 165, 464, 883; 1934, **A**, 1346, etc. (*Signed by*) Joji Sakurai, Shigeru Komatsu, Riko Majima, Yasuhiko Asahina, Hiroshi Nomura.

PARTRIDGE, STANLEY MILES, "Carantoc," Church Road, Northolt, Middlesex. British. Chemist. Ph.D., B.Sc. (London), A.I.C. Papers published in conjunction with Dr. J. Kenyon, F.R.S., and Dr. H. Phillips. *J.C.S.*, 1936, **85**, 128, 1313; 1937, 207. (*Signed by*) J. Kenyon, M. P. Balfe, A. Proven.

WILD, WILLIAM, 1, Bewerley Street, Dewsbury Road, Leeds 11 (Yorks.). British. Demonstrator in Physical Chemistry, The University, Leeds 2. B.Sc. (1st Class Hons.), Ph.D. (Leeds). Educated: University of Leeds (1925-30); Associate of Institute of Chemistry; Commonwealth Fund Fellow (1930-32); Demonstrator in Physical Chemistry at University of Leeds (1933-to date). "Thermal Reaction between Chlorine and Formaldehyde," *J.C.S.*, 1934, 1588; "Preparation of Liquid Monomeric Formaldehyde," *J.C.S.*, 1935, 338; "Vapour Pressure Curve of Formaldehyde and Related Data," *J.C.S.*, 1935, 506; "Photodecomposition of Gaseous Acetone," *J.C.S.*, 1937 (March) (all in collaboration with R. Spence). (*Signed by*) Frederick Challenger, R. Spence, H. M. Dawson, James Colvin.

Forms of Recommendation for Fellowship accepted by the Council under Bye-Law I (2):

BRANT, JOSEPH HENRY, 509, Granada Court, or Tennessee Eastman Corpn., Kingsport, Tennessee, U.S.A. American. Research Chemist. A.B., Ohio Wesleyan Univ., 1930; Ph.D., Cornell Univ., 1935. Teaching Assistant in the Dept. of Chemistry at Cornell Univ., 1930-35. Research Chemist, 1935 to present date for The Tennessee Eastman Corpn. (*Signed by*) N. V. Sidgwick.

ROGER, MAX, 26, Rue Parmentier, Neuilly s/Seine, France. Français. Directeur technique, S. A. Roure Bertrand fils et J. Dupont. Docteur-es-sciences physiques. (*Signed by*) M. Tiffeneau.

VADHANA, SUVAN THAYA, 1142, E. Catherine Street, Ann Arbor, Michigan, U.S.A. Siamese. Student, Graduate School, University of Michigan. B.S. in Ch.E., E.E., and M.E., Tri-State College, Indiana. Working towards advanced degrees. Junior Member of American Chemical Society. Member of the Electrochemical Society, U.S.A. (*Signed by*) H. J. T. Ellingham.

ADDITIONS TO THE LIBRARY.

I. Donations.

DUPONT, G. Cours de chimie industrielle. Vol. IV. Industries organiques. Paris 1937. pp. iv + 250. ill. 60 fr. (*Recd.* 11/5/37.)

From the Publishers: MM. Gauthier-Villars.

HAYNES, WILLIAMS. [Editor]. The Chemical Who's Who. Vol. II: 1937. New Haven 1937. pp. 543. (*Reference.*) \$6. From the Publishers: The Haynes & George Co.

IMPERIAL INSTITUTE. *Mineral Resources Department*. The mineral position of the British Empire. London 1937. pp. 166. (*Reference.*) 4s. net. From the Director.

INTERNATIONAL ALUMINIUM BUREAU. Aluminium in the chemical and food industries. London [1936]. pp. 121. ill. (*Recd.* 24/4/37.) From the British Aluminium Co.

MEE, A. J. Volumetric analysis. London 1937. pp. viii + 223. ill. 7s. 6d. net. (*Recd.* 5/5/37.)

From the Author and Publishers.

RUSSELL, SIR E. JOHN. Soil conditions and plant growth. 7th edition. London 1937. pp. viii + 655. ill. 21s. net. (*Recd.* 24/4/37.) From the Author.

RUSSELL, SIR E. JOHN, and VOELCKER, J. A. Fifty years of field experiments at the Woburn Experimental Station. With a statistical report by W. G. COCHRAN. London 1936. pp. xviii + 392. ill. 21s. net. (*Recd.* 24/4/37.) From Sir John Russell.

STEVENS, HENRY P., and STEVENS, W. H. Rubber latex. 4th edition. London 1936. pp. 224. ill. (*Recd.* 24/4/37.)

From the Rubber Growers' Association.

TABLES ANNUELLES DE CONSTANTES ET DONNÉES NUMÉRIQUES. Table des matières des Vols. VI-X. Années 1923-1930. Paris 1937. pp. xxiv + 48 + 304. (*Reference.*)

From the Comité International.

II. By purchase.

BOMKE, HANS. Vakuumspektroskopie. Leipzig 1937. pp. x + 248. ill. M. 19. (*Recd.* 28/4/37.)

BRIEGLEB, GÜNTHER. Zwischenmolekulare Kräfte und Molekülstruktur. (Sammlung, N.F. Heft 37.) Stuttgart 1937. pp. 308. (*Reference.*) M. 22.

CANADA. *Department of the Interior*. Forest Service. Canadian woods, their properties and uses. By T. A. McELHANNEY and associates. Ottawa 1935. pp. xvi + 345. ill. \$1.25. (*Recd.* 19/4/37.)

FIESER, L. F. The chemistry of natural products related to phenanthrene. Appendix. New York 1937. pp. 339 to 456. \$1. (*Recd.* 5/5/37.)

FRANKENBURGER, WALTER. Katalytische Umsetzungen in homogenen und enzymatischen Systemen. Leipzig 1937. pp. xii + 444. M. 36. (*Recd.* 4/5/37.)

HISCOX, GARDNER D. [Editor]. Henley's twentieth century book of formulas, processes and trade secrets. 1937 revised and enlarged edition. By T. O'CONNOR SLOANE. New York 1937. pp. xxii, xiv, 9 to 883. ill. (*Reference.*) \$4.

HOHN, HANS. Chemische Analysen mit dem Polarographen. Berlin 1937. pp. viii + 102. ill. M. 7.50. (*Recd.* 4/5/37.)

IZARD, L., CILLEULS, J. DES, and KERMARREC, R. La guerre aéro-chimique et les populations civiles. Étude historique, clinique, thérapeutique et préventive. 4th edition. Paris 1937. pp. 476. ill. 15 fr. (*Recd.* 26/4/37.)

KREMANN, ROBERT, and PESTEMER, MAX. Zusammenhänge zwischen physikalischen Eigenschaften und chemischer Konstitution. Dresden 1937. pp. xvi + 225. ill. M. 18. (*Recd.* 28/4/37.)

MACHU, WILLY. Das Wasserstoffperoxyd und die Perverbindungen. Wien 1937. pp. xii + 408. ill. *M.* 39. (*Recd.* 4/5/37.)

MATHEWSON, C. H. [Editor]. Modern uses of nonferrous metals. New York 1935. pp. x + 427. ill. \$3. (*Recd.* 11/5/37.)

TAUBER, HENRY. Experimental enzyme chemistry. Minneapolis 1936. pp. v + 118. ill. [In mimeograph form.] \$3.50. (*Recd.* 13/5/37.)

TAYLOR, HUGH S., and TAYLOR, H. AUSTIN. Elementary physical chemistry. 2nd edition. New York 1937. pp. xvi + 664. ill. \$3.75. (*Recd.* 19/4/37.)

III. Pamphlets.

DEUTSCHE GESELLSCHAFT FÜR GESCHICHTE DER MEDIZIN, NATURWISSENSCHAFT UND TECHNIK. Julius Ruska und die Geschichte der Alchemie mit einem vollständigen Verzeichnis seiner Schriften. Festgabe zu seinem 70. Geburtstage. Berlin 1937. pp. 40.

IMPERIAL INSTITUTE. *Mineral Resources Department*. Reports on the mineral industry of the British Empire and foreign countries. Barium minerals. 2nd edition. By J. SIMPSON. London 1937. pp. 84.

——— Strontium minerals. 2nd edition. By E. H. BEARD. London 1937. pp. 33.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Information Circular No. 2. The wholesomeness of canned foods. By H. B. CRONSHAW. London 1937. pp. 16. ill.

——— Technical Publications. Series B. No. 3. The use of tin in refrigerating equipment. By E. J. DANIELS and D. J. MACNAUGHTAN. (From the *Proc. Brit. Assoc. Refrigeration*, 1936-37, 33.)

VEGAO, LUIS FELIPE. Study referring to the relation between the specific inductive capacity and the refractive index of light and of density. Caracas 1936. pp. 26.

FORTHCOMING MEETINGS IN LONDON.

Thursday, June 3rd, 1937, at 8 p.m.

Ordinary Scientific Meeting, when there will be a ballot for the election of Fellows.

The following papers will be read :

- “ The crystalline structure of the sugars.” By E. G. COX.
- “ Catalytic toxicity and chemical structure. Part I. The relative toxicity of sulphur compounds in catalytic hydrogenation. Part II. The influence of chain length in the alkyl sulphide and mercaptan series.” By E. B. MAXTED and H. C. EVANS.
- “ The kinetics of the decomposition of carbonyl selenide on an allotropic selenium surface.” By R. H. PURCELL and M. H. ZAHORBUK.

Thursday, June 10th, 1937.

VISIT TO ROTHAMSTED EXPERIMENTAL STATION, HARPENDEN.

As stated on the card of meetings issued to Fellows last September, an invitation has been received from the Director of the Lawes Agricultural Trust for Fellows to make a visit of inspection to the Rothamsted Experimental Station, Harpenden, on Thursday, 10th June, 1937.

The visit will occupy the whole day and will be so arranged that Fellows who are unable to spend the morning at Rothamsted will be able to join the Party in the afternoon.

Full particulars have already been sent.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, June 3rd, 1937, at 8 p.m., Professor J. C. PHILIP, O.B.E., D.Sc., F.R.S., Vice-President, in the Chair.

The CHAIRMAN referred to the loss sustained by the Society, through death, of the following Fellows :—

	Elected.	Died.
Charles Frederic Baker	1889.	May 13th, 1937.
John Gibson	1900.	April 21st, 1936.
Arthur Robert Ling	1886.	May 14th, 1937.
Leroy Wiley McCay	1916.	April 13th, 1937.
Sidney Scrivener Napper	1900.	May 13th, 1937.
Arthur George Perkin	1884.	May 30th, 1937.

Messrs. James W. J. Fay, C. J. Brown, F. J. Llewellyn, and W. J. Arrol were formally admitted Fellows of the Chemical Society.

Forms of Recommendation were read for the first time in favour of :—

Charles Ambrose Adams, B.Sc., F.I.C., Swanscombe, Furze Lane, Purley.
 George Douglas Bond, B.Sc., A.I.C., 16, St. Martins-le-Grand, London, E.C.1.
 Ivor Lewis Bradley, 39, Brookfield, Hemlington, Middlesbrough.
 Charles Enrique Dent, Ph.D., D.I.C., A.R.C.S., 14, Raynham Avenue, Didsbury, Manchester.
 Cedric Paul Percy, Inglewood, Kemnal Road, Chislehurst.

Forms of Recommendation were read for the second time in favour of four candidates, and for the third time in favour of seventeen candidates.

Mr. S. H. Woolhouse and Mr. John L. Horton were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected as Fellows :—

Geoffrey Gordon Bates.	Robert Gordon Israel, Ph.D.
Joseph Henry Brant, A.B., Ph.D.	Paul Laeuger, Ph.D.
Cyril Carson.	Dennis Arthur Sydney Martin.
Claude Leopold Leszynski Claremont, B.Sc., F.I.C.	Henry Attwood Mumford.
Harold France, B.Sc.	Kashichi Ono, (Dr.).
Eric Richard Gardner, B.Sc., A.R.C.S.	Stanley Miles Partridge, Ph.D., A.I.C.
Leon Golberg, M.Sc.	Max Roger.
Harold Inglesent.	Suvan Thaya Vadhana, B.S.
	William Wild, Ph.D., A.I.C.

The following papers were read :—

- “ The crystalline structure of the sugars.” By E. G. COX.
- “ Catalytic toxicity and chemical structure. Part I. The relative toxicity of sulphur compounds in catalytic hydrogenation. Part II. The influence of chain length in the alkyl sulphide and mercaptan series.” By E. B. MAXTED and H. C. EVANS.
- “ The kinetics of the decomposition of carbonyl selenide on an allotropic selenium surface.”
 By R. H. PURCELL and M. H. ZAHORBUX.

**VISIT TO THE ROTHAMSTED EXPERIMENTAL STATION ON
THURSDAY, 10TH JUNE, 1937.**

By invitation of Sir John Russell, O.B.E., F.R.S. (Director), Fellows of the Society, numbering about a 100, visited the Rothamsted Experimental Station, Harpenden, on Thursday, 10th June, 1937.

During the morning, Fellows were taken in parties to the various laboratories, at each of which a brief account was given of the work undertaken in that laboratory. In the afternoon Fellows visited the fields, where descriptions were given of the experiments which were being carried out. Fellows were subsequently entertained to tea by the Director, and at the conclusion the President expressed the sincere thanks of the Society to him for his hospitality. This was acknowledged by Sir John Russell.

ANNOUNCEMENTS.

1. The following Address of Congratulation has been sealed in Council and will be presented by the President to the University of Durham on the occasion of the Celebration of the Centenary of its incorporation under Royal Charter on July 3rd, 1937 :—

THE CHEMICAL SOCIETY
TO
THE UNIVERSITY OF DURHAM.

The President, Council, and Fellows of The Chemical Society send cordial greetings and congratulations to the University of Durham on the celebration of the hundredth anniversary of its incorporation under the Royal Charter of 1837.

While your University has from the beginning been for the North-East of England the focus of humanistic learning, you have not failed to encourage the Science of Chemistry. We remember with peculiar pleasure that at our foundation in 1841 we shared with you an Original Member in James F. W. Johnston, your first lecturer in Chemistry.

During the past two generations your University has become an important centre of chemistry. The distinguished Fellows of our Society who have held a Chair of Chemistry at Newcastle have included P. Phillips Bedson, Samuel Smiles, Walter N. Haworth, H. V. A. Briscoe, and G. R. Clemo; and, at Durham, Irvine Masson, under whose guidance chemical teaching and research have since 1924 been firmly established in the Department of Science of which he is Head.

It is the earnest wish of the Chemical Society that the University of Durham may contribute in ever growing measure to the progress of education, and may continue to prosper as a source of learning, culture, and new knowledge.

Signed on behalf of the Chemical Society.

F. G. DONNAN.	<i>President.</i>
EMILE MOND.	<i>Treasurer.</i>
H. J. T. ELLINGHAM.	} <i>Honorary Secretaries.</i>
J. W. COOK.	
C. W. DAVIES.	

Sealed in Council this Seventeenth day of June, One Thousand Nine Hundred and Thirty-Seven.

2. The congratulations of the Society have been conveyed to Mr. F. Woodland Toms, who completed 60 years of Fellowship on June 21st, 1937, and to the following who completed 50 years of Fellowship on June 16th, 1937 :—Mr. Frederick W. Freeman, Mr. Herbert J. Gover, Professor F. W. Traphagen, and Mr. Frederick P. Watson.

RESEARCH FUND.

The Council has decided that in future the Research Fund Committee shall meet in November, instead of December. All persons, therefore, who have received grants, and whose accounts have not been declared closed by the Council, are informed that reports must be received by the Society not later than Monday, November 1st, 1937.

Applications for grants, to be made on forms obtainable from the Assistant Secretary, must be received on or before Monday, November 1st, 1937. Applications from Fellows will receive prior consideration.

Attention is drawn to the fact that the income arising from the Donation of the Worshipful Company of Goldsmiths is principally devoted to the encouragement of research in Inorganic and Metallurgical Chemistry, and that the income from the Perkin Memorial Fund is to be applied to investigations relating to problems connected with the Coal Tar and Allied Industries.

LIBRARY.

From July 16th until September 30th the Library will be open daily from 10 a.m. to 5 p.m., except during the fortnight August 2nd to August 14th inclusive, when it will be entirely closed for revision and cleaning.

VEREIN DEUTSCHER CHEMIKER E.V.

The Society has received notice that a National Gathering of German Chemists, in conjunction with the 50th Anniversary Celebrations of the Verein Deutscher Chemiker, is to be held at Frankfurt from July 6th to 10th, 1937. Full particulars of the programme can be obtained from Offices at Potsdamer Strasse 103a, Berlin, W.35.

BOARD OF TRADE ANNOUNCEMENT.

The Treasury have made an Order under Section 10 (5) of the Finance Act 1926 exempting Di-glyceryl tetra acetate from Key Industry Duty from 16th June, 1937 until 31st December, 1937.

List of papers, or abstracts thereof, received between May 20th and June 17th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- "Photochemistry of nitrogen fixation and its similarity to carbon assimilation." By N. R. DHAR, E. V. SESHACHARYULU, and S. K. MUKERJI.
- "Radioactivity of potassium prepared from animal tissue." By A. LASNITZKI and E. OESER.
- "The decomposition of aniline nitrite." By J. C. EARL.
- "The thermal and photochemical decomposition of acetyl peroxide." By O. J. WALKER and G. L. E. WILD.
- "The heat of decomposition of dichlorine heptoxide." By C. F. GOODEVE and A. E. L. MARSH.
- "Kationoid reactivity of aromatic compounds. Part III. The action of piperidine on *mesobenzanthrone*." By W. BRADLEY.
- "The state of carbon dioxide in aqueous solutions." By A. W. TITHERLEY.
- "Dehydration nuclei on crystals of copper sulphate pentahydrate." By W. E. GARNER and H. V. PIKE.
- " β -Asarone." By B. S. RAO.

- “The mechanism of the formation of sulphur nitride from sulphur chloride and ammonia.”
By M. H. M. ARNOLD.
- “2:5-Dimethyl xylofuranose and 2:3-dimethyl xylose.” By G. J. ROBERTSON and D. GALL.
- “The influence of solvents and of other factors on the rotation of optically active compounds. Part XXXV. Attractive power and solvent effect on rotation.” By T. S. PATTERSON and (Miss) G. M. HOLMES.
- “The chemical kinetics of the interaction of the alkyl iodides with sodium eugenoxide in ethyl alcohol.” By S. S. WOOLF.
- “Force constants and molecular structure. Part II. Ethylene.” By H. W. THOMPSON and J. W. LINNETT.
- “Some derivatives of homophthalimide.” By R. D. HAWORTH.
- “The synthesis of compounds related to the sterols, bile acids and oestrus-producing hormones. Part XI. A “diene-synthesis” of phenanthrene and hydrophenanthrene derivatives.” By A. COHEN.
- “Sugar osazones and their anhydrides.” By E. E. PERCIVAL and E. G. V. PERCIVAL.
- “The reactions of sodium mono- and di-sulphides with 1-chloro-2-nitro-, 2-chloro-1-nitro- and 1-chloro-4-nitro-naphthalene.” By H. H. HODGSON and E. LEIGH.
- “The resolution of *cis*- and *trans*-norcaryophyllenic acids.” By H. N. RYDON.
- “The reactions of thiocarbonyl chloride. Part V. With compounds containing the -NH-NH₂ group.” By T. BECKET and G. M. DYSON.
- “Co-ordination compounds of semicarbazide, phenylsemicarbazide, *m*-tolylsemicarbazide, and aminoguanidine.” By G. S. SMITH.
- “Condensation of methyl pyruvate with methyl malonate in the presence of anhydrous zinc chloride.” By J. W. BAKER and (Miss) A. S. LAUFER.
- “The absorption spectrum of bivalent samarium.” By F. D. S. BUTEMENT and H. TERREY.
- “Leucoanthocyanins. Part III. Formation of cyanidin chloride from a constituent of the gum of *Butea frondosa*.” By (Mrs.) G. M. ROBINSON.
- “A relationship between β -naphthylamine and ethyl β -aminocrotonate.” By J. KENNER, W. H. RITCHIE, and R. L. WAIN.
- “A micro-flotation method for precise comparison of liquid densities and its application to a preliminary investigation of the distribution of heavy water in certain salt hydrates, and other matters.” By J. S. ANDERSON, R. H. PURCELL, T. G. PEARSON, A. KING, F. W. JAMES, H. J. EMELÉUS, and H. V. A. BRISCOE.
- “Experiments on the synthesis of substances related to the sterols. Part XVII. 8-Methylhydrindan-1-one.” By R. ROBINSON and J. WALKER.
- “System potassium chloride-potassium chlorate-water at 20°, 50°, and 75°.” By M. B. DONALD.
- “Derivatives of *ortho*-hydroxybenzylsulphonic acid.” By E. A. SHEARING and S. SMILES.
- “The Liesegang phenomena as a source of colloidal matter.” By M. COPISAROW.
- “The elimination of the phosphate radical in qualitative analysis.” By L. W. N. GODWARD and A. M. WARD.
- “The dissociation constants of organic acids. Part XVIII. Some cyclic 1:1-diacetic acids.” By W. L. GERMAN and A. I. VOGEL.
- “Complexes of polynitro-compounds. Part II. Compounds of polynitro-substances with derivatives of 1-keto-1:2:3:4-tetrahydrocarbazole.” By A. KENT and D. MCNEIL.
- “The conductivity of potassium chloride solutions.” By C. W. DAVIES.
- “Curare alkaloids. Part III. Pot-curare.” By H. KING.
- “The passivity of metals. Part VIII. The rate of growth of oxide films on iron.” By H. A. MILEY and U. R. EVANS.
- “Structural problems in the indole group. Part II.” By R. C. G. MOGGRIDGE and S. G. P. PLANT.
-

ADDITIONS TO THE LIBRARY.

I. *Donations.*

CORK. *University College.* Agricultural Bulletin No. 4. Oils from Irish grown plants. Preliminary report. By JOSEPH REILLY and DENIS F. KELLY. Cork 1937. pp. 92. ill. 2s. 6d. net. (*Recd.* 19/5/37.) From the London Publishers: Messrs. Longmans Green & Co.

GLASSTONE, SAMUEL. The electrochemistry of solutions. 2nd edition. London 1937. pp. xii + 551. ill. 25s. net. (*Recd.* 14/6/37.)

From the Publishers: Messrs. Methuen & Co.

GROVES, A. W. Silicate analysis. A manual for geologists and chemists, with chapters on check calculations and geochemical data. London 1937. pp. xxii + 230. ill. 12s. 6d. net. (*Recd.* 25/5/37.) From the Publishers: Messrs. Thomas Murby & Co.

[GUILLET, LEON, and others.] A la mémoire de Henry Le Chatelier, 1850-1936. (*Rev. Met.*, 1937, Special No.) pp. iv + 160. ill. Fr. 30. (*Recd.* 3/6/37.)

From the Faraday Society.

HATTORI, SHIZUO. Plant colouring matters. Tokyo 1936. pp. 10 + 618 + 98. [In Japanese.] (*Recd.* 24/5/37.) From the Author.

HÖRETH, ADOLF. Die deutsche Gärungseisig-Industrie: ihre geschichtliche Entwicklung und ihre Bedeutung innerhalb der deutschen Volkswirtschaft. Würzburg 1935. pp. x + 95. M. 3.60. (*Recd.* 14/6/37.)

From the Publisher: Herr Konrad Triltsch.

KLAR, M. Fabrikation von absolutem Alkoholzwecks Verwendung als Zusatzmittel zu Motor-Treibstoffen. Halle 1936. pp. viii + 84. ill. M. 5.60. (*Recd.* 14/7/37.)

From the Publisher: Herr Wilhelm Knapp.

LEDoux, ÉDOUARD. Séchage des produits hygroskopiques. Adsorption de la vapeur d'eau. Paris 1937. pp. viii + 93. ill. Fr. 32. (*Recd.* 14/6/37.)

From the Publisher: M. Ch. Béranger.

MENSCHUTKIN, B. N. Chemistry and the way of its development. Moscow 1937. pp. 352. ill. [In Russian.] (*Recd.* 19/5/37.)

From the Author.

MITCHELL, C. AINSWORTH. Inks: their composition and manufacture, including methods of examination and a full list of British patents. Being a 4th edition of Mitchell and Hepworth's "Inks." London 1937. pp. xii + 408. ill. 12s. 6d. net. (*Recd.* 9/6/37.)

From the Author.

PERTZOFF, V. A. Pouvoir rotatoire des ions de l'acide d-glutamique. Montpellier 1937. pp. 171. ill. Fr. 25. (*Recd.* 3/6/37.)

From the Faraday Society.

STEVENS, BLAMEY. The identity theory. 2nd edition. Manchester 1936. pp. xvi + 247 + 8 + 16. ill. 7s. 6d. net. (*Recd.* 2/6/37.)

From the Author.

STOLL, ARTHUR. The cardiac glycosides. A series of three lectures. London 1937. pp. viii + 80. ill. (Two copies). 10s. 6d. net.

From the Pharmaceutical Society.

UNION DES RÉPUBLIQUES SOVIÉTIQUES SOCIALISTES. *Académie des Sciences.* Travaux du Congrès Jubilaire Mendelév. 2 vols. Moscow 1936-37. pp. 666, 471. ill. (*Reference.*)

From the Academy.

WEISS, WALTER. Blätter, Bestimmungstabelle zur Benutzung bei mikroskopischen Arbeiten. Dresden 1935. pp. x + 78. M. 3. (*Recd.* 14/6/37.)

From the Author.

II. *By purchase.*

BALDWIN, ERNEST. An introduction to comparative biochemistry. Cambridge 1937. pp. xviii + 112. ill. 5s. net. (*Recd.* 17/6/37.)

BASSETT, HENRY NORMAN. Bearing metals and alloys. London 1937. pp. xiv + 428. ill. 25s. net. (*Recd.* 17/6/37.)

BELL, [SIR WILLIAM JAMES.] Sale of food and drugs. 9th edition. By R. A. ROBINSON. London 1937. pp. xxviii + 321 + 37. 15s. net. (*Recd.* 17/6/37.)

BULL, HENRY B. The biochemistry of the lipids. New York 1937. pp. x + 169. ill. \$2.75. (*Recd.* 17/6/37.)

CANDLER, A. C. Atomic spectra and the vector model. 2 vols. Cambridge 1937. pp. viii + 237, vi + 279. ill. 30s. net. (*Recd.* 17/6/37.)

DULAC, ROGER. Industrial cold adhesives. English edition by JOSEPH L. ROSENBAUM. London 1937. pp. xii + 192. 8s. 6d. net. (*Recd.* 17/6/37.)

GAMOW, G. Structure of atomic nuclei and nuclear transformations. 2nd edition of "Constitution of atomic nuclei and radioactivity." Oxford 1937. pp. xii + 270. ill. 17s. 6d. net. (*Recd.* 17/6/37.)

HALL, SIR A. D. The feeding of crops and stock. 2nd edition. 3 parts. London 1937. pp. x + 120, x + 122, xii + 108. ill. 10s. 6d. net. (*Recd.* 17/6/37.)

MEDICAL RESEARCH COUNCIL. Special Report Series, No. 218. A dietary survey in terms of the actual foodstuffs consumed. By E. P. CATHCART and A. M. T. MURRAY. London 1936. pp. 56. (*Reference.*) 1s. net.

PRENTISS, AUGUSTIN M. Chemicals in war: a treatise on chemical warfare. With chapters on the protection of civil populations and international situation by GEORGE J. B. FISHER.

New York 1937. pp. xviii + 739. ill. \$7.50. (*Recd.* 17/6/37.)

PRODINGER, WILHELM. Organische Fällungsmittel in der quantitativen Analyse. (Die chemische Analyse, Vol. XXXVII.) Stuttgart 1937. pp. xii + 163. ill. (*Reference.*)

ROHOLM, KAJ. Fluorine intoxication: a clinical-hygienic study. With a review of the literature and some experimental investigations. Copenhagen 1937. pp. xii + 364. ill. 20s. net. (*Recd.* 17/6/37.)

RUTHERFORD, LORD. The newer alchemy. Based on the Henry Sidgwick Memorial Lecture . . . 1936. Cambridge 1937. pp. viii + 67. ill. 3s. 6d. net. (*Recd.* 17/6/37.)

STEDMAN, THOMAS LATHROP. A practical medical dictionary. 13th edition. [Baltimore] 1936. pp. xii + 1291. ill. (*Reference.*) \$7.50.

[STEPHENSON, J. NEWELL. Editor.] The manufacture of pulp and paper. 3rd edition. Vol. III. Preparation . . . and treatment of pulp. New York 1937. pp. xiv + [828]. ill. \$6.50. (*Recd.* 17/6/37.)

UBBELOHDE, A. R. An introduction to modern thermodynamical principles. Oxford 1937. pp. viii + 131. 8s. 6d. net. (*Recd.* 17/6/37.)

III. Pamphlets.

BOARD OF EDUCATION. *Science Museum*. Very low temperatures. Book 2. By T. C. CRAWHALL and O. KANTOROWICZ. London 1937. pp. 59. ill.

BRITISH STANDARDS INSTITUTION. British

Standard Specifications. No. 734—1937. Density hydrometers for use in milk. pp. 73. ill.

DE, RAJENDRALAL. Twin elements in Travancore monazite. Dacca 1937. pp. 18.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Report of test . . . on the carbonising plant of Coal and Allied Industries, Ltd., at Seaham Harbour, County Durham. London 1937. pp. iv + 33. ill.

— *Forest Products Research*. Record No. 17. (Wood Preservation Series No. 3.) Wood preservatives. By N. A. RICHARDSON. London 1937. pp. iv + 13.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Technical Publications. Series A. No. 53. The effect of cold-work and annealing on the hardness of some tin-antimony, tin-antimony-copper, and tin-antimony-silver alloys. By R. E. LEYMAN. London 1937. pp. 18. ill.

RITCHIE, PATRICK D. Spectrographic studies on ancient glass. Chinese glass, from pre-Han to T'ang times. (*From Tech. Studies*, 1937, 5.)

UNION INTERNATIONALE DE CHIMIE. *Commission Permanente de Thermochimie*. Revue analytique et critique de thermochimie organique. Appendices au 1er Rapport de la Commission. German text by W. A. ROTH. English and French translations by L. J. P. KEFFLER. Paris 1936. pp. 42. (Two copies.)

UNITED STATES. *Department of Commerce*. National Bureau of Standards. Circular C413. Inks. By C. E. WATERS. pp. 54.

Missing Pages From 63-74

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Extra Meeting, Thursday, October 28th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The visitors present were welcomed by the PRESIDENT.

After introducing the Lecturer, the PRESIDENT called on Professor C. H. Desch to deliver the Le Chatelier Memorial Lecture.

At the conclusion of the Lecture, a vote of thanks to the Lecturer, proposed by Professor A. C. G. Egerton and seconded by Professor S. Sugden, was supported by the PRESIDENT and carried with acclamation. Professor Desch made brief acknowledgment.

Ordinary Scientific Meeting, Thursday, November 4th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death on October 23rd, 1937, of Mr. Ernest Frederick Hooper who was elected a Fellow in 1891.

Dr. Gilbert F. Smith and Mr. Denys I. Coomber were formally admitted Fellows of the Chemical Society.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Geoffrey Cecil Barker, B.A., Gonville and Caius College, Cambridge.
Walter Francis Beech, B.Sc., 2, Carthusian Street, E.C. 1.
Meruyn George Church, B.Sc., Little St. Ann's, Ferndale Avenue, Chertsey.
Geoffrey Edward Coates, 5, Le Breos Avenue, Swansea.
James Gordon Cook, B.Sc., Beachville, Newbiggin-by-Sea, Northumberland.
Cecilie Mary French, B.Sc., 16, Malvern Avenue, Highams Park, E.4.
Helle Elpiniki Georgiadis, B.Sc., 2, Park House, Cambridge Street, W. 2.
Edmund George Noel Greaves, B.Sc., 32, Russell Square, W.C. 1.
Frank Hiron, B.Sc., 68, Park Avenue, Bush Hill Park, Enfield.
Eric Hoggarth, B.Sc., 36, Alice Street, Perkinsville, Co. Durham.
Richard Sibley Hughes, B.Sc., A.R.C.S., 4, Sheila House, North Circular Road, N.W. 11.
Robert Farquhar Scudamore Hutchison, B.Sc., Caius College, Cambridge.
David Hugh Oakley John, 15, Highbury Terrace, N. 5.
Chia Si Lu, B.Sc., 22, Steele's Road, N.W. 3.
Norman Angus McKenna, B.A., Trent College, Derbyshire.
Bernard Alfred Middleton, B.Sc., 42, Edward Road, Gainsborough.
Thomas Percy Nevell, B.Sc., 21, Polsted Road, S.E. 6.
Robert Eugene Pflaumer, B.S., M.A., 6, Baker Street, W. 1.
Winifred Margaret Helen Poole, B.A., 111, Twyford Avenue, West Acton, W. 3.
Akhouri Nareshwari Prasad, M.Sc., Tribeni Bhawan, P.O. Mahendru, Patna District, India.
Richard Charles Pink, B.Sc., Iveagh, Bessbrook, Co. Armagh.
Hugh Stott Taylor, Prof., D.Sc., F.R.S., Frick Chemical Laboratory, Princeton, N.J., U.S.A.
Bryan Atkinson Toms, M.Sc., St. Anne's, Caw, Londonderry.
Ian Cunliffe Whitfield, B.Sc., 1, Priory Close, Ruislip.
Derek McLean Wyllie, 52A, The Grove, Isleworth.

and for the second time in favour of 45 candidates.

The following papers were read :

“The direct conversion of iodic acid and aromatic hydrocarbons to iodonium compounds.” By IRVINE MASSON and E. RACE.

“The dipole moments of vapours. Part IV. Ethers and amines. Part V. Aromatic compounds. Part VI. Bond moments and mesomeric moments.” By L. G. GROVES and S. SUGDEN.

“Acid base catalysis in the depolymerisation of dimeric dihydroxyacetone.” By R. P. BELL and E. C. BAUGHAN.

Ordinary Scientific Meeting, Thursday, November 18th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society through death, of Professor Jean Baptiste Senderens, and stated that the Council had passed the following resolution :

“The President, Officers, and Council of the Chemical Society learned with profound regret of the death on September 26th, 1937, of Professor Jean Baptiste Senderens, who was elected an Honorary Fellow of the Society on March 18th, 1920, and desire to express their deep sorrow at the loss of their distinguished colleague and their high appreciation of the services he has rendered to the Science of Chemistry. They wish to convey their deep sympathy to the relatives of their late Honorary Fellow in their irreparable loss.”

Those present stood while the resolution was read.

The PRESIDENT also referred to the loss sustained by the Society, through death, of the following Fellows :

	Elected.	Died.
Frederick Watkins Evans	1906	Mar. 2nd, 1937.
John Augustus Voelcker	1884	Nov. 6th, 1937.

It was announced :

1. That the congratulations of the Society had been conveyed to Professor W. N. Haworth on being awarded the Nobel Prize for Chemistry jointly with Professor Paul Karrer, and to Professor N. V. Sidgwick who had been awarded a Royal Medal of the Royal Society for 1937.

2. That the Council had expressed thanks to Mr. Emile Mond and to Dr. R. Lessing for presenting copies of the Society's publications, and to Dr. E. F. Armstrong for various papers relating to the Society in the possession of the late Professor H. E. Armstrong.

3. That the Council had appointed Dr. Stanley Peat as Local Representative for Birmingham.

The following were formally admitted Fellows of the Society: G. P. Pollard, S. Fordham, L. L. Ware, G. H. Twigg, and G. B. B. M. Sutherland.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Donald Wallace Adamson, M.Sc.Tech., Ph.D., Magdalen College, Oxford.
 Michael James Steuart Dewar, Balliol College, Oxford.
 Eric Gordon Downing, B.Sc., 12, Sherwood Park Road, Mitcham, Surrey.
 Leslie Hilton Easson, Ph.D., "Croftlands," Petteril Road, Upperby, Carlisle.
 John Ernest Garner, 6, Kingfield Road, Ealing, W. 5.
 Heinrich Janz, Dr.Phil., Parkstrasse 42, Bad Soden am Taunus, Germany.
 Robert Michaelis, Dr.phil.nat., Medical Chemistry Department, Teviot Place, University New Buildings, Edinburgh.
 James Bruce Eric Patterson, M.Sc., A.I.C., Staple, Totnes, S. Devon.
 Robert Wilson Tebbett, 236, Quinton Road, Harborne, Birmingham, 17.
 Philip Vincent Youle, M.Sc., Crewe Hall, Clarkehouse Road, Sheffield, 10.

and also of the following whose application has been accepted by the Council under Bye-Law I (2) :

Francis A. Meunier, Prof., 7, Rue de Mons, Hyon, Belgium.

Forms of Recommendation for Fellowship in favour of 25 candidates were read for the second time.

The PRESIDENT then called on Dr. J. M. Robertson to deliver his lecture entitled "Bond Character and Interatomic Distance."

At the conclusion of the lecture, a vote of thanks to the Lecturer, was proposed by Professor N. V. Sidgwick and seconded by Professor Wm. Wardlaw. It was supported by Professor L. O. Brockway, of the University of Pasadena, and Professor P. M. Gross, of Duke University, and carried with acclamation.

MEETINGS OUTSIDE LONDON.

GLASGOW

A meeting of the Society, in conjunction with the Glasgow Sections of the Institute of Chemistry and the Society of Chemical Industry, was held in the Royal Technical College, Glasgow, on Friday, October 22nd, 1937. Professor T. S. PATERSON occupied the Chair.

The Lecturer, Mr. J. D. Bernal, F.R.S., dealt with "Systematic Theory of the Liquid State." Pointing out that the liquid state resembled the solid rather than the gaseous state, he indicated physical and mathematical approaches to the problem. Liquid structures were then discussed under the classification of spherical, quasi-spherical, aspherical, and hyperspherical types. Finally, he demonstrated the behaviour in a beam of polarised light of the protein of tobacco mosaic virus, thus bringing an absorbing lecture to a spectacular climax. A discussion followed, and a vote of thanks, proposed by Dr. P. C. Austin, was carried with acclamation.

SOUTH WALES

A meeting of the Society was held jointly with the Cardiff Technical College Chemical Society on Friday, October 22nd, 1937, at 6 p.m. in the Chemistry Lecture Theatre of the Technical College, Dr. H. B. WATSON in the Chair.

Professor F. A. Paneth delivered a lecture on "The Chemical Exploration of the Stratosphere." A short discussion followed in which Dr. J. F. J. Dippy, Dr. D. P. Evans, Mr. R. L. Amoore, and Dr. M. Jowett took part.

A vote of thanks to the Lecturer proposed by Dr. Cule Davies and seconded by Mr. J. E. Page, was carried with acclamation.

A meeting of the Society was held jointly with the University College of Swansea Chemical Society on Thursday, October 28th, 1937, at 6 p.m., in the Chemistry Lecture Theatre of the College. The Chair was taken by Mr. W. D. E. THOMAS, President of the Students' Society.

Dr. S. Glasstone delivered a lecture on "Some Aspects of Electrolytic Oxidation." After a short discussion in which Dr. N. H. Hartshorne and Mr. E. E. Ayling took part, a vote of thanks to the Lecturer proposed by Dr. N. H. Hartshorne, and seconded by Mr. R. Richards, was carried with acclamation.

EDINBURGH

A joint meeting of the Society with the University of Edinburgh Chemical Society was held in the Chemistry Lecture Theatre, King's Buildings, on Tuesday, November 2nd, 1937, at 6 p.m. Dr. J. A. V. Butler was in the Chair, and Professor G. R. Clemo, F.R.S., delivered a lecture on "Some Aspects of the Organic Chemistry of Nitrogen." The question of valency in the ammonias was first discussed, and after reviewing the recent extension

of knowledge through the work of Prelog and in the Lecturer's own laboratories on the synthesis of *bicyclo*-(1 : 2 : 2)-aza-1-heptane and of quinuclidine, in which the three nitrogen covalencies would be constrained and non-planar, evidence was advanced from the chemistry of octahydropyridocoline for the directional character of the fourth nitrogen covalency, as represented by its lone pair of electrons. The Lecturer then outlined the bearing of this stereochemical problem on the chemistry of the lupin alkaloids generally, and illustrated the demands made by synthesis on the grit and resource of the investigators by reference to the preparation of *d*-l-lupinine and *d*-l-oxy-spartine.

The lecture concluded with a brief account of the extension of lupin alkaloid chemistry to other natural products, and stress was laid on the vital importance of stereochemistry to the science of chemistry generally. A hearty vote of thanks to the Lecturer was moved by Dr. H. G. Rule, and carried with acclamation.

LIVERPOOL

A meeting of the Society was held at the University of Liverpool on November 2nd, 1937, when Professor R. G. W. Norrish, F.R.S., delivered a lecture entitled "Recent Developments in the Study of Free Radicals by Photochemical Methods."

Professor W. C. McC. LEWIS was in the Chair, and a hearty vote of thanks to the Lecturer, proposed by Dr. A. McKeown and seconded by Dr. R. O. Griffith, was carried with acclamation.

MANCHESTER

A meeting, arranged by the Society of Chemical Industry, was held jointly with that Society, the Institute of Chemistry, the Society of Dyers and Colourists and the Manchester Literary and Philosophical Society, on Friday, November 5th, 1937, in the Manchester Central Library, at which a lecture was given by Dr. Kurt H. Meyer on "Researches on Rubber and Rubber-like Substances." This was the first occasion on which the Chemical Society has taken part in this, the largest joint meeting of chemical bodies held annually in Manchester. The Lecturer fascinated his audience by his lucid exposition of a difficult subject, and the vote of thanks, moved by Mr. F. Scholefield and seconded by Dr. W. J. S. Naunton, was received with acclamation by a large audience.

NORTH WALES

A lecture on "Exchange between Light and Heavy Hydrogen" was given by Professor C. K. Ingold, F.R.S., in the Chemistry Lecture Theatre, University College, Bangor, on Friday, November 5th, 1937, at a joint meeting with the University College of North Wales Chemical Society. Mr. J. LEWIS was in the Chair.

At the close of the discussion, the Lecturer was heartily thanked.

SHEFFIELD

A meeting of the Society, in conjunction with the University of Sheffield Chemical Society, was held in the Chemistry Department, The University, Sheffield, on Friday, November 12th, 1937, at 5.30 p.m., when Professor John Read, F.R.S., delivered a lecture on "An Hour Among the Alchemists" to a large and appreciative audience. The lecture was illustrated with a selection of lantern slides, both plain and coloured, and also by a gramophone record of the so-called fugues written by the alchemist, Count Michael Maier.

IMPORTANT NOTICES**BRITISH CHEMICAL AND PHYSIOLOGICAL ABSTRACTS "A."**

Fellows are reminded that forms ordering British Chemical and Physiological Abstracts "A" for 1938 should be completed and returned to the Assistant Secretary *as soon as possible*. Abstracts for 1938 will not be supplied to any Fellow until the form has been returned. Copies of the form may be obtained from the Assistant Secretary.

ANNUAL REPORTS FOR 1937, VOL. XXXIV.

Applications for the *Annual Reports* for 1937, at the reduced price of 5s. 6d., should reach the Assistant Secretary by January 15th, 1938.

THE LIBRARY.

The Library will be closed for the Christmas Holidays from Thursday, December 23rd, at 1 p.m., until Wednesday, December 29th, at 10 a.m. inclusive.

BOARD OF TRADE.

Exemption from Key Industry Duty.

The Treasury have made an Order under Section 10 (5) of the Finance Act, 1926 exempting R. Mannite (R. Mannitol) from Key Industry Duty from November 17th, 1937, until December 31st, 1938.

The Treasury Order, which will be entitled The Safeguarding of Industries (Exemption) No. 8 Order, 1937, will shortly be published by H.M. Stationery Office.

BRITISH STANDARDS INSTITUTION.

Copies of British Standards No. 755 "Apparatus and Methods for the Determination of the Percentage of Fat in Milk and Milk Products by the Babcock Method. Part 1. Apparatus, and Part 2. Methods," have been received from the British Standards Institution, with the request that these new British Standards shall be adopted wherever possible.

TENTH INTERNATIONAL CONGRESS OF CHEMISTRY, MAY 15th to 21st, 1938.

The Tenth International Congress of Chemistry will be held in Rome on May 15th to 21st, 1938. Papers read before the Congress will be divided into the following Sections :

- I. Chemistry and scientific thought.
- II. Basic chemical products.
- III. Chemistry and the utilisation of the various forms of energy.
- IV. Chemistry and alimentation.
- V. Chemistry and house. Chemistry and clothing.
- VI. Chemistry and health. Chemistry and hygiene. Chemistry and beauty cure.
- VII. Chemistry and documentation. Chemistry and advertising. Chemistry and recreation.
- VIII. Chemistry and agricultural production.
- IX. Chemistry and industry.
- X. Chemistry and transport.
- XI. Chemistry and defence.

Copies of the preliminary programmes giving further particulars can be obtained from the Chairman of the British National Committee for Chemistry, Professor R. Robinson, D.Sc., F.R.S., The Dyson Perrins Laboratory, South Parks Road, Oxford.

RUBBER TECHNOLOGY CONFERENCE, May 23rd to 25th, 1938.

A Rubber Technology Conference under the auspices of The Institution of the Rubber Industry and supported by the Rubber Division of the American Chemical Society will be held in London on May 23rd to 25th, 1938. Part I of the programme of the Conference will be devoted to a Symposium on Methods of Improving and Evaluating the Durability of Rubber comprising :

1. Manufacturing Conditions, including Compounding.
2. Uses of " Synthetic Rubbers " and Allied Plastics.
3. Testing Methods, including Chemical, Physical, Performance and Accelerated Ageing Tests.

Part II will deal with General Subjects, comprising :

1. Chemistry and Physics of Latex and Rubber.
2. Technology of Latex and Rubber.
3. Rubber Derivatives and their Uses.
4. Raw Materials of the Rubber Industry.
5. Manufacture of Particular Goods.
6. Machinery and Appliances, Steam and Heat.
7. Organisation and Administration.

Fellows of the Society are cordially invited to participate in the Conference, and contributions to Part I of the programme will be particularly welcome.

Copies of the preliminary programme giving further particulars and instruction for Authors of Papers, can be obtained from The Secretary, Institution of the Rubber Industry, 12, Whitehall, London, S.W. 1.

STANDARDISATION IN TEXTILES.

The Council of the Textile Institute has decided to set up a Representative Advisory Committee on Standardisation in Textiles, and has now published a Standardisation Scheme on which it invites comments or suggestions. Copies of the scheme and of the Agreements between the Textile Institute, the British Standards Institution and the Society of Dyers and Colourists can be obtained on application to The Secretary, The Textile Institute, 16, St. Mary's Parsonage, Manchester, 3.

WORLD POWER CONFERENCE, 1938.

A Sectional Meeting of the World Power Conference will be held in Vienna from August 25th to September 2nd, 1938, by invitation of the Austrian National Committee.

The Executive of the British National Committee will meet shortly to consider British participation in the Conference, and to appoint a Committee to arrange for the preparation of British papers for presentation at the Conference.

Communications should be addressed to the Honorary Secretary, British National Committee, World Power Conference, 36, Kingsway, London, W.C. 2, from whom copies of the Technical Programme may be obtained.

The Council has made the following grants from the Research Fund :—

ABERYSTWYTH, UNIVERSITY COLLEGE OF WALES.		£	s.	d.	£	s.	d.
C. R. Bury.	" Physico-chemical properties of aqueous solutions of long-chain paraffin compounds "				10	0	0
AUCKLAND, UNIVERSITY COLLEGE.							
L. H. Briggs.	" Plant products of New Zealand "	20	0	0			
R. A. Robinson.	" Isopiestic method of determining the vapour pressure of solutions "	15	0	0			
					35	0	0
BANGOR, UNIVERSITY COLLEGE OF NORTH WALES.							
G. R. Ramage.	(a) " The caryophyllenes." (b) " Chrysene homologues and derivatives "				12	0	0
CARDIFF, UNIVERSITY COLLEGE OF SOUTH WALES.							
W. Cule Davies.	" Studies on the reactivities of tertiary amines " ...				10	0	0
CAMBRIDGE UNIVERSITY.							
J. N. Agar.	" The overpotential of hydrogen on clean metal surfaces "	8	0	0			
G. C. Barker.	" Rapid electrode potential changes "	9	0	0			
T. P. Hughes.	" The sliding friction of clean metals and the influence of the adsorbed layer upon it "	9	0	0			
R. F. S. Hutchison.	" Effect of chemical constitution on the surface interaction of sliding solids "	7	0	0			
L. Leben.	" The measurement of fluctuating kinetic friction "	9	0	0			
H. P. Stout.	" Deposition of ions of the azide type "	7	0	0			
D. Tabor.	" Area of contact between moving surfaces "	9	0	0			
C. H. Bamford.	" Photodecomposition of organic compounds "	8	0	0			
E. F. Brookman.	" Polymerisation of some organic compounds "	8	0	0			
E. J. Buckler.	" Kinetics of chain reactions "	8	0	0			
E. A. Moelwyn-Hughes.	" Kinetics of certain reactions of alkyl halides in solution "	15	0	0			
D. A. Stephan.	" Photochemical decomposition of dimethylketen "	8	0	0			
G. B. M. Sutherland.	" Infra-red spectra of polyatomic molecules "	10	0	0			
C. K. Wu.	" Raman spectra at low temperatures "	7	0	0			
D. Richter.	" Chemistry of amines related to adrenaline "	15	0	0			
					137	0	0
EXETER, UNIVERSITY COLLEGE.							
W. Cocker.	(a) " The preparation and investigation of properties of amino acids." (b) " The orientation of substituent groups in <i>meta</i> -dimethylaminobenzaldehyde "				15	0	0
LEEDS UNIVERSITY.							
C. W. Shoppee.	" Synthesis of <i>ditert.</i> -butyl triketone "				5	0	0
LEICESTER, UNIVERSITY COLLEGE.							
A. Hickling.	" Mechanism of the Brown-Walker electrosynthesis "	10	0	0			
L. Hunter.	" Molecular association due to hydrogen (<i>continued</i>) "	10	0	0			
					20	0	0
LONDON, BATTERSEA GRAMMAR SCHOOL.							
J. G. F. Druce.	" Organic rhenium compounds "				6	0	0
LONDON, BEDFORD COLLEGE FOR WOMEN.							
Mary S. Lesslie.	" Configuration of heterocyclic compounds "	8	0	0			
M. H. C. Wiseman.	" Magnetic properties of selenato- and tellurato-alums, and the free acids "	8	0	0			
M. M. Jamison.	" Stereochemistry of tervalent nitrogen "	8	0	0			
					24	0	0

	£	s.	d.	£	s.	d.
LONDON, IMPERIAL COLLEGE.						
A. Ahmad. "Mechanism of polymerisation"	8	0	0			
V. C. E. Burnop. "Catalytic oxidation of cyclic olefins and cyclisation of diolefinic acids"	5	0	0			
D. F. Elliott. "Sapogenin quillaic acid"	6	0	0			
G. H. Elliott. "Synthesis of polycyclic compounds containing an angular methyl group. Part II"	6	0	0			
M. O. Farooq. "Addition of ketenes to olefines"	7	0	0			
R. S. Hughes. "Synthesis of substances related to the sexual hormones"	6	0	0			
J. F. Martin. "Mechanism of polymerisation of $\beta\gamma$ -dimethylbutadiene"	6	0	0			
K. O. A. Michaelis. "Dehydrogenation of alicyclic compounds" ...	5	0	0			
G. P. Pollard. "Studies in dehydrogenation by means of selenium"	6	0	0			
S. L. S. Thomas. "The dehydrogenation of alicyclic and sesquiterpene hydrocarbons over metallic catalysts"	6	0	0			
A. L. Walpole. "The chemistry of polycyclic compounds"	6	0	0			
A. M. Woolman. "Preparation of 3:17-dimethylcyclopentenophenanthrene and similar compounds (<i>continued</i>)"	6	0	0			
				73	0	0
LONDON, QUEEN MARY COLLEGE.						
D. I. Coomber. "Dielectric polarisation"	4	0	0			
A. B. Hart. "Some reversible oxidation-reduction systems" ...	4	0	0			
B. A. Middleton. "Dielectric polarisation"	4	0	0			
L. B. Wood. "Investigation on heterogeneous equilibria involving hydrogen and deuterium"	8	0	0			
B. Ellis. "Sterol derivatives with substituents in position C ₂ " ...	4	0	0			
H. Shapiro. "Introduction of unsaturated linkages in the sterol ring system"	5	0	0			
				29	0	0
LONDON, SIR JOHN CASS TECHNICAL INSTITUTE.						
A. R. Martin. "Dipole moments and partition coefficients" ...				12	0	0
LONDON, ST. MARY'S HOSPITAL MEDICAL SCHOOL.						
G. King. (a) "Preparation of α -ketol carboxylic acids." (b) "Oxidation of di- and polyhydroxy-fatty acids with periodic acid" ...				15	0	0
LONDON, UNIVERSITY COLLEGE.						
M. G. Church. "The kinetics, mechanism and steric orientation of substitution"	12	0	0			
C. M. French. "Molecular structure of diborane and of hexadeuterodiborane"	15	0	0			
H. E. Georgiadis. "Tetradeuteroallene and dideuteroketens" ...	8	0	0			
E. G. N. Greaves. "Mechanism of the replacement of halogen in β -halogeno-acids in relation to the Walden inversion"	12	0	0			
F. Hiron. "Reaction kinetics and the Walden inversion"	12	0	0			
T. P. Nevell. "Use of radioactive indicators in chemical reactions"	8	0	0			
I. C. Whitfield. "Mechanism of the replacement of $\cdot\text{OR}$ by $\cdot\text{Hal}$ with special reference to the Walden inversion"	12	0	0			
V. De Gaouck. "Phototropic phenomena in organic compounds" ...	10	0	0			
P. Russell. "Electric polarisations of very dilute solutions" ...	12	0	0			
H. Vine. "Association and dielectric polarisation"	4	0	0			
				105	0	0
LONDON, WOOLWICH POLYTECHNIC.						
W. L. German. "Studies of ionisation in non-aqueous media (<i>continued</i>)"	5	0	0			
D. M. Cowan. "Influence of substituents on chemical and physical properties of organic compounds"	8	0	0			
A. S. Nickelson. "Complex nickel compounds"	5	0	0			
				18	0	0
LOUGHBOROUGH COLLEGE, LEICESTERSHIRE.						
G. M. Dyson. "Colour reactions of organic compounds. Part II" ...				10	0	0
MANCHESTER, COLLEGE OF TECHNOLOGY.						
W. F. Short. "Diterpene alcohols and acids"				5	0	0

	£	s.	d.	£	s.	d.
MANCHESTER UNIVERSITY.						
G. N. Burkhardt. "Synthesis of substances related to vitamin D" ...	20	0	0			
NOTTINGHAM, UNIVERSITY COLLEGE.						
B. D. Shaw. "Fission products of pyridine bases"	10	0	0			
OXFORD UNIVERSITY.						
R. P. Bell. "Acid-base catalysis"	15	0	0			
SHEFFIELD UNIVERSITY.						
S. Glasstone. "Molecular complexes in the liquid phase"	11	17	6			
SOUTHAMPTON, UNIVERSITY COLLEGE.						
A. Lawson. "Constitution of atisine alkaloid from <i>A. heterophyllum</i> "	12	0	0			
SWANSEA, UNIVERSITY COLLEGE.						
N. H. Hartshorne. "Kinetics of polymorphic transformation" ...	5	0	0			
SYDNEY UNIVERSITY.						
J. C. Earl. "Action of nitrous acid on amines"	25	0	0			
WHITBY COUNTY SCHOOL.						
J. R. Files. "Substitution in simple derivatives of γ -pyrone" ...	5	0	0			
TOTAL	£644	17	6			

List of papers, or abstracts thereof, received between October 21st and November 18th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting or which have appeared in the Journal.)

- "The acid-base function in non-aqueous media. Part I. The auto-protolytic constant of *m*-cresol." By D. C. GRIFFITHS.
- "The acid-base function in non-aqueous media. Part II. The relative strengths of acids in chlorobenzene." By D. C. GRIFFITHS.
- "The configurations of some *p*-menthane derivatives." By G. H. KEATS.
- "Aluminium chloride, a new reagent for the condensation of β -ketonic esters with phenols. Part II. The condensation of resacetophenone with ethyl acetoacetate." By N. M. SHAH and R. C. SHAH.
- "Preparation of *m*-dimethylaminobenzaldehyde. Part I." By A. C. BOTTOMLEY, W. COCKER, and (Miss) P. NANNEY.
- "Some derivatives of diphenylamine and a new synthesis of *N*-arylanthranilic acids and of acridones." By (Miss) M. M. JAMISON and E. E. TURNER.
- "Preparation of phthalocyanine-like pigments related to the porphyrins." By C. E. DENT.
- "A general chemical method for the preparation of the deuterated benzenes." By A. KLIT and A. LANGSETH.
- "Gallium. Part V. Complex fluorides of gallium with univalent and bivalent metals." By W. PUGH.
- "Exchange between light and heavy oxygen. Part I. Oxygen interchange between sulphate ions and water." By S. C. DATTA, J. N. E. DAY, and C. K. INGOLD.
- "Dehydro-di-2-hydroxy-1-naphthylmethane." By E. A. SHEARING and S. SMILES.
- "Co-ordinated copper and nickel compounds of salicylidene derivatives." By L. HUNTER and J. A. MARRIOTT.
- "The constitution of the purine nucleosides. Part V. Adenine thiomethylpentoside." By R. FALCONER and J. M. GULLAND.

- "The acylation of diazomethane. Part II. The reaction of diazomethane with *O*-acetyl-mandelyl chloride and some transformations of the product." By W. BRADLEY and J. K. EATON.
- "Isomorphous relationships of some analogous organic derivatives of oxygen, sulphur, and selenium." By N. M. CULLINANE and C. A. J. PLUMMER.
- "Decomposition reactions of the aromatic diazo-compounds. Part II. Some reactions of benzenediazonium chloride." By W. A. WATERS.
- "Decomposition reactions of the aromatic diazo-compounds. Part III. Some non-ionic reactions of benzene diazo hydroxide." By W. A. WATERS.
- "Constituents of the leaves of certain *Leucadendron* species. Part I. Leucodrin." By W. S. RAPSON.
- "Methylation of glucosamine." By W. O. CUTLER, W. N. HAWORTH, and S. PEAT.
- "Polysaccharides. Part XXVI. Xylan." By R. A. S. BYWATER, W. N. HAWORTH, E. L. HIRST, and S. PEAT.
- "The configuration of heterocyclic compounds. Part VI. An examination of derivatives of selenoxanthone and phenoxselenine." By (Miss) M. C. THOMPSON and E. E. TURNER.
- "The hydration of acetylenes. Part II. Pentyne-2." By E. L. R. MOWAT and J. C. SMITH.
- "Modified cinchona alkaloids. Part V. β -isoQuinotoxine and the stereochemistry of the parent bases." By W. SOLOMON.

FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY DECEMBER 2nd, 1937.

ABRAHAM, MOOLAMANNIL CHERIAN, Quilon, Travancore, S. India. Indian. Asst. Biochemist. B.Sc. in Agriculture, Madras University. D.I.C. Imperial College of Science and Technology. (*Signed by*) A. G. Pollard, H. J. T. Ellingham, T. G. Pearson.

ADAMS, CHARLES AMBROSE, "Swanscombe," Furze Lane, Purley, Surrey. British. Senior Chemist, Government Laboratory, London. Member of Staff of Government Laboratory since 1911. B.Sc. (London) (1911). F.I.C., Barrister-at-Law, Member of The Society of Public Analysts. (*Signed by*) J. J. Fox, A. More, A. G. Francis.

BARKER, GEOFFREY CECIL, Gonville and Caius College, Cambridge. British. Research Student. B.A. (Cambridge). 1st Class (Chemistry) Natural Science Tripos, Part II. Date of birth Oct. 2nd, 1915. (*Signed by*) F. P. Bowden, J. N. Agar, D. Tabor.

BARKER, GEOFFREY ROBERT, 11, Melrose Avenue, Sherwood, Nottingham. British. Student of Chemistry, University College, Nottingham. Student for B.Sc. Special Degree in Chemistry. Date of birth Sept. 19th, 1917. (*Signed by*) J. Masson Gulland, B. D. Shaw, E. B. R. Prideaux.

BARTON, CHARLES EDWIN, "Edgehill," Lichfield Road, Northwood Hills, Middlesex. English. B.Sc. (Liverpool). Chemist, Government Lab. (*Signed by*) F. R. Ennos, H. K. Whalley, J. R. Nicholls.

BAXTER, ALBERT WILLIAM, 84, Ravenscroft Road, Beckenham, Kent. British. B.Sc. (Hons. Chemistry), Queen Mary College, London. Student undertaking research with Prof. Partington on Electrochemistry. Date of birth Aug. 14th, 1916. (*Signed by*) D. C. Jones, J. R. Partington, V. A. Petrow.

BEECH, WALTER FRANCIS, 2, Carthusian Street, E.C. 1. British. B.Sc. (Special) of London University, First Class Honours Chemistry. Research Student and Junior Demonstrator in Chemistry at Queen Mary College, London. Date of birth April 17th, 1917. (*Signed by*) J. R. Partington, H. D. K. Drew, V. A. Petrow.

BESLY, DONALD MAURICE, Hurst Wickham Rise, Hassocks, Sussex. British. Student. B.A. (Oxford). Open Science Scholar, Exeter College, Oxford (1934). Date of birth Feb. 21st, 1916. (*Signed by*) J. H. Wolfenden, Ronald P. Bell, F. E. King.

BEVAN, STANLEY CECIL, Aylwood, Heavitree, Exeter. British Subject by birth. Research Student. B.Sc. (Special Chemistry), London, 1937. The candidate is carrying out a course

of physico-chemical research under the supervision of Professor H. T. S. Britton. Date of birth, May 26th, 1916. (*Signed by*) H. T. S. Britton, L. L. Bircumshaw, Wesley Cocker.

BOND, GEORGE DOUGLAS, 16, St. Martins-le-Grand, E.C. 1. English. Chemist. B.Sc. (London), A.I.C. 12 years experience in production of artificial silk and transparent cellulose film and research work appertaining thereto. (*Signed by*) W. H. Glover, Charles Dorée, J. C. Crocker.

BOTTOMS, CHARLES HERBERT, 58, Scarle Road, Wembley, Middx. British. Student, Queen Mary College. Passed, B.Sc. Special Examination Chemistry (2nd Class Hons.) (Qualifying 3rd year). Research Student under Professor Partington in Physical Chemistry. Date of birth Jan. 18th, 1917. (*Signed by*) J. R. Partington, H. D. K. Drew, V. A. Petrow.

BRADLEY, IVOR LEWIS, 39, Brookfield, Hemlington, Middlesbrough. British. Analyst. Trained with Messrs. Pattinson & Stead, Borough Analysts for Middlesbrough. Assistant and Chief Chemist to Sinai Mining Co., Egypt. Analyst I.C.I., Billingham. Specialising in metallurgical analysis and analysis and assaying of ores, rocks and minerals. (*Signed by*) M. P. Applebey, A. W. Taylor, J. G. M. Bremner.

BROMFIELD, OTHO FREDERICK CHARLES, 48, Danson Crescent, Welling, Kent. British. Commercial Editor, *The Chemist and Druggist*. F.R.S.A. Secretary, British Chemical & Dyestuffs Traders Association, Ltd., 1919-1931. (*Signed by*) J. J. Fox, J. Davidson Pratt, W. J. U. Woolcock.

BURNOP, VICTOR CHARLES ERNEST. Imperial College Hostel, Prince Consort Road, S.W. 7. British. Organic Chem. Research Student, Royal College of Science. B.Sc., A.R.C.S., Imperial College, London. To receive *Journal*, and use Library. Date of birth July 19th, 1915. (*Signed by*) G. A. R. Kon, R. P. Linstead, A. L. Walpole.

BUSHROD, CHARLES JAMES, 64, Highfield Road, Acton, W. 3. British. Research Chemist. M.Sc. (Victoria University, Manchester). 1931-1935 Chem. Dept., Manchester; B.Sc. (Hons. Chem.) 1934; 1934-1935 Research in Phys. Chem. under Prof. M. Polanyi; M.Sc. 1935. Engaged in Industrial Chemistry from Nov. 1935 until present. (*Signed by*) M. Polanyi, J. B. M. Herbert, Colin Campbell, G. N. Burkhardt.

CAMPBELL, HUGH, 23, East Holm, Golders Green, N.W. 11. British. Student. Reading chemistry in Part II Natural Science Tripos at Cambridge. Date of birth Oct. 24th, 1916. (*Signed by*) W. G. Palmer, B. C. Saunders, H. McCombie.

CHURCH, MERUYN GEORGE, "Little St. Ann's," Ferndale Avenue, Chertsey, Surrey. British. Research Student. B.Sc. (1st Class Hons. Chemistry), University College, London. Date of birth Dec. 14th, 1916. (*Signed by*) C. L. Wilson, C. K. Ingold, E. D. Hughes.

COATES, GEOFFREY EDWARD, 5, Le Breos Avenue, Swansea. British. Student reading for an Honours Degree in Chemistry at Oxford University. Wishes to receive the *Journal*. Date of birth May 14th, 1917. (*Signed by*) Ronald P. Bell, Wilson Baker, C. N. Hinshelwood.

COLEMAN, RICHARD NORTON, 1, North Parade, Lincoln. British. Student. External London B.Sc. (1st Class Hons. Chemistry) from University College, Nottingham. Two years' research in Physical Chemistry at University College, Nottingham under the direction of Dr. E. B. R. Prideaux on the subject "A Physico-chemical Study of the Combination between Nitrogen Bases and the Lower Fatty Acids." *J.C.S.*, I, 1936, 1346; II, 1937, 4; III, 1937, 462; IV, recently accepted for publication. Date of birth Oct. 22nd, 1913. (*Signed by*) J. Masson Gulland, E. B. R. Prideaux, B. D. Shaw.

COOK, JAMES GORDON, Beachville, Newbiggin-by-Sea, Northumberland. British. B.Sc. (1st Class Hons.), Chemistry, King's College, Newcastle. Chemical Research Student. Date of birth Feb. 19th, 1916. (*Signed by*) G. R. Clemo, Richard Raper, Alan C. Robson.

COOKE, GEORGE BRISTOW, Hyver Hall, Barnet Gate, Herts. British. Solicitor. B.A., LL.B. (Cambridge). 1st class in Chemistry, Natural Science Tripos, Part I. Member of firm of Solicitors to the Chemical Society. Engaged in legal practice, in which patent matters, including those relating to chemical patents, are concerned. (*Signed by*) Francis A. Carr, J. W. Cook, H. J. T. Ellingham, C. W. Davies.

DAY, FRANK HENRY. "Chelwood," Currock Road, Carlisle, Cumberland. British. Technical Teacher. M.Sc. (London). Lecturer in Chemistry, Carlisle Technical School. Experience in teaching pure and applied Chemistry. Desire to keep in touch with the latest developments in Chemistry. (*Signed by*) Ronald Cuthill, C. G. Lyons, J. W. Warburton.

DENT, CHARLES ENRIQUE, 36, Queen Court, Queen Square, W.C. 1. British. Research Chemist. Ph.D. (Lond.), B.Sc. (Lond.), D.I.C., A.R.C.S., A.I.C. Joint papers with R. P. Linstead, *J.C.S.*, 1934, 1027-1039; 1936, 1719-1736. (*Signed by*) E. H. Rodd, M. A. T. Rogers, W. J. Evans.

EDWARDS, DAVID MORRIS, 18, Dudlow Drive, Liverpool, 18. British. B.Sc. (Wales). Lecturer and Demonstrator in Inorganic Chemistry, University of Liverpool. (*Signed by*) F. C. Guthrie, R. A. Morton, V. J. Occleshaw.

ELLIOTT, DONALD FREDERICK, 155, Danelands, Cat Hill, East Barnet, Herts. British. Chemist. A.R.C.S., Royal College of Science. Organic Research Student. Date of birth March 25th, 1918. (*Signed by*) G. A. R. Kon, A. H. Cook, R. P. Linstead.

ELLIS, BERNARD, 259, Evering Road, Clapton, E. 5. British. Student. B.Sc. (Hons. Lond.) (Pending Subsid.). **Arranging Research at Queen Mary College.** Date of birth March 8th, 1917. (*Signed by*) J. R. Partington, D. C. Jones, V. A. Petrow.

FRENCH, CECILIE MARY, 16, Malvern Avenue, Highams Park, E. 4. British. Research Student. B.Sc. (London). Date of birth October 23rd, 1915. (*Signed by*) C. L. Wilson, C. K. Ingold, R. J. W. Le Fèvre.

GEORGIADIS, HELLE ELPINIKI, 2, Park House, Cambridge Street, W. 2. Greek. Research Student in Chemistry. B.Sc., University College, London. Date of birth Nov. 7th, 1916. (*Signed by*) C. K. Ingold, C. L. Wilson, J. N. E. Day.

GREAVES, EDMUND GEORGE NOEL, 26, Sunderland Terrace, W. 2. British Subject by birth. Research Student. B.Sc. (2nd Class Hons. in Special Chemistry) at University College, London. Date of birth Dec. 15th, 1913. (*Signed by*) C. K. Ingold, E. D. Hughes, L. C. Bateman.

GRIFFITH, ROLAND HALL, 70, Mairyat Road, Wimbledon, S.W. 19. British. Research Chemist, The Gas Light and Coke Co. B.A., D.Phil. (Oxford). Author of "Contact Catalysis," Oxford 1936; "Water Gas," Benn 1934. *J.C.S.*, 1924, 125, 940, 1401, 2625; 1925, 127, 990. (*Signed by*) E. Hope, S. G. P. Plant, J. Masson Gulland.

HARRIS, JACK OATWAY, 16, Tremayne Terrace, Torpoint, Cornwall. British. Student at University College, Exeter. B.Sc. (London External) (2nd Class Hons. Chemistry). Date of birth May 3rd, 1916. (*Signed by*) H. T. S. Britton, L. L. Bircumshaw, Wesley Cocker.

HART, ANTHONY BERNARD, "The Lodge," Hadley Wood Golf Club, Barnet, Herts. British. Research Student. B.Sc., London University, obtained at Queen Mary College. Worked from Oct. 1935—June 1937 at Queen Mary College for B.Sc. Special Degree in Chemistry. Am now commencing a course of research work, under Prof. Partington at this College. Date of birth July 7th, 1917. (*Signed by*) J. R. Partington, H. D. K. Drew, V. A. Petrow.

HIRON, FRANK, 68, Park Avenue, Bush Hill Park, Enfield, Middlesex. English. Research Student in Chemistry. B.Sc. (London), University College. Date of birth Feb. 6th, 1917. (*Signed by*) C. L. Wilson, C. K. Ingold, E. D. Hughes.

HOGGARTH, ERIC, 36, Alice Street, Perkinsville, Pelton, Co. Durham. British. Research Worker. B.Sc. (Dunelm) (1st Class Hons.). Date of birth Sept. 29th, 1915. (*Signed by*) G. R. Clemo, Richard Raper, Alan C. Robson.

HUGHES, RICHARD SIBLEY, 4, Sheila House, North Circular Road, N.W. 11. British. Research Student. A.R.C.S., B.Sc. (2nd Class Hons.), Imperial College, London. To obtain the Society's publications and access to the Library. Date of birth Nov. 7th, 1916. (*Signed by*) G. A. R. Kon, R. P. Linstead, G. H. Elliott.

HUTCHISON, ROBERT FARQUHAR SCUDAMORE. Caius College, Cambridge. British. Research Student. B.Sc., University of Tasmania. Date of birth Oct. 18th, 1915. (*Signed by*) F. P. Bowden, J. N. Agar, H. P. Stout.

JOHN, DAVID HUGH OAKLEY, 15, Highbury Terrace, N. 5. British. Student, at the Imperial College of Science. Date of birth June 25th, 1918. (*Signed by*) James C. Philip, H. V. A. Briscoe, H. J. Emeléus, H. F. Harwood, J. Stuart Anderson.

KAHN, EDWARD, Hayirli Han, Ayaz Pasa, Istanbul, Turkey. Turkish. Concerned with the importation of Chemical Products and intermediates. B.Sc. (Special Chemistry) (London). I would like to keep in touch with the advances of Chemistry. (*Signed by*) C. K. Ingold, Henry Terrey, O. L. Brady.

LU, CHIA SI, 22, Steele's Road, N.W. 3. Chinese. B.Sc. (University of Amoy, China, 1934). Demonstrator, Chemistry Department, University of Amoy (1934-1937). Postgraduate Student, University College, London. Date of birth Oct. 26th, 1915. (*Signed by*) S. Sugden, Henry Terrey, Oswald J. Walker.

MCKENNA, NORMAN ANGUS, Trent College, Derbyshire. British. Senior Science Master at Trent College. B.A. (Oxford). Teacher and Lecturer to Delegacy of Extra-Mural Studies, University College, Nottingham. Author of "Theoretical Electrochemistry" to be published shortly. Date of birth Aug. 14th, 1913. (*Signed by*) E. A. Moelwyn-Hughes, L. A. Moignard, R. T. Lattey.

MACLELLAN, RONALD JOHN, 43, Bervie Street, Glasgow, S.W. 1. British. Teacher. B.Sc., Glasgow University. Investigation of modes of preparation of menthyl esters of *ortho*- and *meta*-bromobenzene sulphonic acid and of *meta*-toluene sulphonic acid, their optical rotations and the optical rotation of the menthene formed in decomposing them. Date of birth March 19th, 1913. (Signed by) R. Leslie Collett, H. E. Cox, H. V. A. Briscoe.

MCQUILLIN, FRANCIS JOSEPH, Dyson Perrins Laboratory, South Parks Road, Oxford. British. Research Student. B.A., B.Sc. (Oxon.). First class in Chemistry, Oxford, 1936. Goldsmiths' Senior Student, 1936. Du Feu, McQuillin, and Robinson, *J.C.S.*, 1937, 53. Adamson, McQuillin, Robinson and Simonsen, *ibid.*, 1937, 1576. Date of birth June 16th, 1913. (Signed by) F. E. King, R. Robinson, James Walker.

MARTIN, JOHN FRANCIS, 99, Lexham Gardens, W. 8. British. Research Student. A.R.C.S., B.Sc. Date of Birth Feb. 2nd, 1917. (Signed by) G. A. R. Kon, E. H. Farmer, A. H. Cook.

MATHER, EWART, "Scotch Hall," Trevor, Wrexham, Denbighshire. British. Works Chemist. B.Sc. (London); Fellow of the Institute of Chemistry. Engaged in chemical manufacture for the past 23 years. Now Chief Chemist, Monsanto Chemicals, Ltd. (Signed by) W. D. Scott, C. Chapman, R. Leslie Collett.

MEREWETHER, JOHN WILLIAM TYLER, Rothwood, Bowral, N.S.W., Australia. English. Student at the University of Sydney. Desire to receive the *Journal* of the Chemical Society and the *Annual Reports on the Progress of Chemistry*. Date of birth Aug. 11th, 1915. (Signed by) C. E. Fawsitt, Thomas Iredale, J. S. Fitzgerald.

MICHAELIS, KURT OTTO ADOLF, 22, Hyde Park Gate, S.W. 7. German. Chemical Research Student. B.Sc., A.R.C.S., Royal College of Science, London. Three years' course at the Royal College of Science, S.W. 7. Now research student. Date of birth Aug. 22nd, 1916. (Signed by) G. A. R. Kon, R. P. Linstead, L. L. Ware, R. Lessing.

MIDDLETON, BERNARD ALFRED, 42, Edward Road, Gainsborough, Lincs. British. B.Sc. (London) (1st Class Hons.). Post Graduate Research Student at Queen Mary College. Date of birth Aug. 18th, 1915. (Signed by) J. R. Partington, W. H. Patterson, D. C. Jones.

MITCHELL, JOHN ARNOLD, 2, The Avenue, Eastbourne. British. M.Sc. (Leeds), Ph.D. (London). Lecturer in Chemistry Bath Technical School (1911-1915), The Polytechnic, Regent St., W. 1. (1918 onwards). (Signed by) H. Lambourne, J. C. Crocker, W. Taylor.

NEVELL, THOMAS PERCY, 21, Polsted Road, S.E. 6. British. Research Student. B.Sc. (London). Eighteen months' research in Organic Chemistry at University College. Date of birth April 19th, 1916. (Signed by) C. K. Ingold, C. G. Raison, C. L. Wilson.

O'DONNELL, RONALD WILLIAM HAMILTON, 5, Chevin Road, Orrell Park, Liverpool, 9. British. Research Chemist. B.Sc. (Hons. Chemistry, Liverpool), Ph.D. (Liverpool). Associate of the Institute of Chemistry. Research on natural products, 1934-1937. *J.C.S.*, 1936, 419 and 423. Date of birth Aug. 7th, 1913. (Signed by) R. A. Morton, A. Robertson, A. McGOOKIN.

OPENSHAW, HARRY TACON, Magdalen College, Oxford. British. Research Student. B.A., B.Sc. (Oxford). Senior Demy of Magdalen College, Oxford. Engaged in Research in Organic Chemistry since 1934. King, L'Ecuyer and (in part) Openshaw. "Preparation of Aldehydes from Nitriles (Stephen's Method)." *J.C.S.*, 1936, 352. Date of birth Jan. 23rd, 1915. (Signed by) Robert Robinson, F. E. King, E. Hope.

PELMORE, DENIS RUDOLF, 181, Woodstock Road, Oxford. British. Research student. B.A. (Cambridge). Date of birth Nov. 21st, 1914. (Signed by) J. C. Smith, S. G. P. Plant, D. Ll. Hammick.

PERCY, CEDRIC PAUL, "Inglewood," Kemnal Road, Chislehurst, Kent. British. Company Director. For many years the applicant has been interested in the development of magnesium by electrochemical processes and is at present actively connected with the largest commercial unit now being constructed in this Country, *i.e.* the Magnesium Elektron Limited (Director). (Signed by) W. Francis, J. Davidson Pratt, E. F. Armstrong.

PFLAUMER, ROBERT EUGENE, 6, Baker Street, W. 1. U.S.A. Student. B.S., M.A. (Princeton Univ., U.S.A.). Candidate for D.Phil. degree at Oxford University. (Signed by) Ronald P. Bell, F. E. King, James Walker.

PINK, RICHARD CHARLES, "Iveagh," Bessbrook, Co. Armagh, N. Ireland. British. Assistant Lecturer, Chemistry Dept., Queen's Univ., Belfast. B.Sc., Queen's Univ., Belfast. Engaged in Chemical Research. Date of Birth March 25th, 1916. (Signed by) A. W. Stewart, Cecil L. Wilson, H. Graham.

POOLE, WINIFRED MARGARET HELEN, 111, Twyford Avenue, West Acton, W. 3. British.

Student. B.A. (Natural Sciences Tripos, Cambridge). Open Science Scholar, Girton College, Cambridge 1934-1937. Date of birth Oct. 23rd, 1915. (*Signed by*) W. H. Mills, F. G. Mann, M. L. Tomlinson.

PRASAD, AKHOURI NARESHWARI, "Tribeni Bhawan," P.O. Mahendru (Patna Dt.), India. Indian. Student of Chemistry. M.Sc. Examination of the Patna University. I am greatly interested in Chemistry. I have done post-graduate work in Chemistry with oils and fats as my special subject. Date of birth Aug. 1st, 1915. (*Signed by*) R. C. Ray, M. Q. Doja, P. B. Ganguly.

PYE, CHARLES ROSSALL, 57, Stirling Road, Lancaster. British. Assistant Chemist (Research). B.Sc. (Special), London University (External). Assistant Research Chemist Jas. Williamson & Son, Ltd., Lancaster. Date of birth March 4th, 1913. (*Signed by*) James Allan, F. Neville Woodward, Rowland Williams.

SHAPIRO, HARRY, 41, Earlham Grove, Forest Gate, E. 7. British. Student. B.Sc. (Hons.), Queen Mary College, London. Student, arranging Research in Organic Chemistry, proposed to commence in September 1937. Date of birth Dec. 1st, 1916. (*Signed by*) J. R. Partington, K. W. Pepper, V. A. Petrow.

SHEARING, EDWIN ALBERT, Dominion Tobacco Co. (1929), Ltd.; Cumberland Road, E. 13. British. Research Chemist. B.Sc. (London). Two years' research under Prof. S. Smiles, King's College, London; Ph.D. thesis in preparation. Shearing and Smiles, *J.C.S.*, 1937, 1348. Date of birth July 4th, 1915. (*Signed by*) Samuel Smiles, E. W. McClelland, D. W. G. Style.

SUTTON, ROBERT ARTHUR, 88, Chapel Street, St. Helens, Lancashire. British. Chemist. B.Sc., Liverpool University. 1st Class Final B.Sc. 1st Class Honours B.Sc. Student Member of Institute of Chemistry. Date of birth July 10th, 1916. (*Signed by*) R. A. Morton, A. Robertson, W. Doran.

TAYLOR, HUGH STOTT, Frick Chemical Laboratory, Princeton, N.J., U.S.A. British. David B. Jones Research Professor of Chemistry, Princeton University. B.Sc., 1909, M.Sc. 1910, D.Sc. 1914, Liverpool University; D.Sc. *h.c.*, Louvain 1937; Fellow of the Royal Society; Member of the Pontifical Academy of Sciences; since 1922 Professor at Princeton University; author of numerous texts and contributions to the scientific journals, especially in catalysis and photochemistry. With H. Bassett, *J.C.S.*, 1911, 99, 1402; 1912, 101, 578; 1914, 105, 1926. H. S. Taylor, *ibid.*, 1913, 103, 31. (*Signed by*) Alan W. C. Menzies, N. V. Sidgwick, C. N. Hinshelwood, H. W. Thompson, L. E. Sutton, Frederick M. Brewer.

TOMS, BRYAN ATKINSON, "St. Anne's," Caw, Londonderry, N. Ireland. British. Assistant Lecturer, Chemical Dept., Queen's University, Belfast. M.Sc. (Queen's University, Belfast). Engaged in Chemical Research. Date of birth Jan. 17th, 1916. (*Signed by*) A. W. Stewart, Cecil L. Wilson, H. Graham.

TURNER, DENYS GRAHAME, 4, Upton Hill, Torquay, Devon. British. Third Year Student working for London B.Sc. (External) in Special Chemistry at University College, Exeter. Date of birth May 5th, 1918. (*Signed by*) H. T. S. Britton, L. L. Bircumshaw, R. King.

WARDROP, IAN DALGLISH, 83, Highlands Boulevard, Leigh-on-Sea, Essex. British. Assistant Superintendent Petroleum Wharves and Refineries, London & Thames Haven Oil Wharves, Ltd. Interest in Chemistry and Technology—desire membership to keep in touch with its advances and have access to Library. (Training Sir John Cass Tech. Inst.) (*Signed by*) N. L. Anfilogoff, G. A. Benford, M. M. Healey.

WHITFIELD, IAN CUNLIFFE, 1, Priory Close, Ruislip, Middlesex. British. Research Student. B.Sc. (London). Date of birth June 14th, 1917. (*Signed by*) C. L. Wilson, C. K. Ingold, B. J. MacNulty, E. D. Hughes.

WILLIAMS, RICHARD TECWYN, Physiology Department, The University, Edmund St., Birmingham, 3. Welsh. Assistant Lecturer in Biochemistry. B.Sc., Ph.D. (Wales). Publications: *Biochemical Journ.*, 1933, 27, 1197, 1205, 1210; 1934, 28, 131, 136; 1936, 30, 794, 799; *Journ. Scientific Instruments*, 1937, 14, 178; *Nature*, 1931, 128, 187; 1933, 131, 57. With Dr. J. Pryde, *J.C.S.*, 1933, 640, 642, 1627. With Dr. W. V. Thorpe, *ibid.*, 1937, 494. (*Signed by*) W. V. Thorpe, S. R. Carter, John Pryde, E. G. Cox, Wm. Wardlaw.

WOOD, LESLIE BALLENTYNE, 195, Shrewsbury Road, Forest Gate, E. 7. British. B.Sc. (Special Hons. Chemistry), Queen Mary College, London University. Research Student under the supervision of Professor Partington working on heterogeneous reactions with hydrogen and deuterium. Date of birth Aug. 24th, 1915. (*Signed by*) J. R. Partington, H. D. K. Drew, V. A. Petrow.

WOODMAN, FRANCIS JOSEPH, 7, Abbeville Road, Clapham Park, S.W. 4. British. B.Sc.

(Hons. Lond.). Research Student. Date of birth March 20th, 1916. (*Signed by*) C. Dorée, J. C. Crocker, P. J. Hardwick.

WYLLIE, DEREK MCLEAN, 52a, The Grove, Isleworth, Middlesex. British. Student at Royal College of Science. Date of birth May 19th, 1918. (*Signed by*) H. V. A. Briscoe, H. J. Emelèus, L. S. Theobald, James C. Philip, H. F. Harwood, R. H. Purcell.

YARNOLD, WILFRED WALTER, 42, Cross Street, Abergavenny, Mon. British. Engaged in Analytical Work. Chemist, Royal Arsenal, Woolwich, S.E. 18. Part Time Research Student, Woolwich Polytechnic. B.Sc. (General, Cardiff), 1934; B.Sc. (2nd Class Hons. Chemistry), 1935; M.Sc. (Chemistry), 1936. Undergraduate, Cardiff University College, 1932-1934. Honours School of Chemistry, 1934-1935. Research Student, 1935-1936. Desire to receive Journal and Abstracts in order to follow trend of modern science. (*Signed by*) W. J. Jones, S. T. Bowden, W. Cule Davies.

Forms of Recommendation for Fellowship accepted by the Council under Bye-Law I (2):

ARULANANTHAM, DANIEL CHELLATHURAI, Nallore, Jaffna, Ceylon. Tamil. Teacher. B.Sc. (Calcutta) with distinction. Desire to receive the publications, to attend the meetings, and to use the library. (*Signed by*) A. Kandiah.

BIRKS, GEORGE FREDERICK, 42 POWELL STREET, Killara, New South Wales, Australia. British (Australian born). Manufacturing chemist. Member of the Pharmaceutical Society of South Australia. Member of the Pharmaceutical Society of New South Wales. Elected an Honorary Member of the Pharmaceutical Society of New South Wales. Manufacturing Chemist for 40 years. (*Signed by*) William Wood.

GHOSE, SUDHIR KUMAR, 23/1, Behiatola Street, P.O. Hathcola, Calcutta, India. Hindu (Indian). Assistant Analyst, Calcutta Corporation, Calcutta. M.B. (Cal.), D.T.M. (Liv.). Working as an analytical chemist in the Calcutta Corporation Laboratory for the last eight years. (*Signed by*) A. Robertson.

HÜCKEL, WALTER, Breslau Wardeinstr., 3. Deutschland. ordentlicher Professor an der Universität und Technischen Hochschule. Dr.phil., Universität Göttingen. Author of "Zur Stereochemie bicyclischer Ringsystems, I-XII"; "Aenderungen des Molekülbaus bei chemischen Reaktionen, I-III"; "Stereoisomerie alicyclischer Oxime"; "Molekülbau und Reaktionsgeschwindigkeit"; "Katalyse mit kolloiden Metallen"; "Der gegenwärtige Stand der Messungstheorie"; "Theoretische Grundlagen der organischen Chemie"; "Lehrbuch der Chemie, Bände 2." (*Signed by*) Otto Ruff.

MADIGAN, KENDALL MORGAN, 231, Macquarie St., Sydney, New South Wales, Australia. British. Dental Surgeon, Doctor of Dental Surgery, Univ. of Alberta, Canada. N.S.W. Dental Board Examinations, Conducted by the University of Sydney. I am at present engaged in Dental Materia Medica Research Work. I wish to obtain the *British Chemical Abstracts* regularly, and keep in touch with modern developments in Chemical Research. (*Signed by*) George Z. Dupain.

NEUHÄUSSER, ADOLF, Rio de Janeiro (Brazil), Rua da Alfandega, no. 100-20. German. Manager of the technical Department of the Companhia Anilinas e Productos Chimicos do Brasil. Doctor of philosophy—University of Erlangen (Germany). "New Method of the Quantitative Analysis of Spectrum," published in the *Zeitschrift für angewandte Chemie*, 1928, 41, 1218. Assistant in the physical-chemical laboratory of the University of Erlangen, 1927-1929. (*Signed by*) F. G. Donnan.

PATTERSON, WILLIAM ALBERT, 54, Tindale Road, Artarmon, N.S.W., Australia. British. Chemist and Company Manager. Member Chemical Society, Sydney Technical College. (*Signed by*) Horace Finnemore.

SINGHAL, HAR SWARUP, I/c E. I. Railway Hospital, Barabanki, U.P., India. Hindu. Practice of Medicine and Surgery and also Pharmacy. L.M.P. (1921). United Provinces State Board of Medical Examinations. Regd. Medical Practitioner under Medical Council of Registration U.P., No. 1347 of 18.11.1921; under Medical Council of Registration, Bengal, No. 8853 of 15.12.1932; under Medical Council of Registration, Behar and Orissa, No. 2625 of 7.9.1934. Interested in Chemistry and wish to keep in touch with its advances, particularly Pharmaceutical Chemistry. (*Signed by*) Keshab D. Bhargava.

ADDITIONS TO THE LIBRARY.

I. Donations.

- BARRON, HARRY. Modern rubber chemistry. London 1937. pp. 342. ill. 18s. net. (*Recd.* 16/11/37.) From the Publishers: Messrs. Hutchinson & Co., Ltd.
- BASLE, SOCIETY OF CHEMICAL INDUSTRY. Ciba Review. No. 1, etc. Basle 1937+. (*Reference.*) From the Society.
- BOYS, SIR CHARLES VERNON. Weeds, weeds, weeds. London [1937]. pp. 69. 1s. net. (*Recd.* 25/10/37.) From the Author.
- BRUNI, GIUSEPPE, with the collaboration of G. R. LEVI. Chimica generale ed inorganica. 4th edition. Milano 1937. pp. xvi + 594. ill. L. 60. (*Recd.* 1/11/37.) From the Publishers: Libreria Editrice Politecnica.
- FINCH, G. I., and WILMAN, H. The study of surface structure by electron diffraction. (From the *Ergeb. exakt. Naturw.*, 1937, 16.) pp. [84]. ill. (*Recd.* 27/10/37.) From Professor G. I. Finch, M.B.E.
- INDIA. Society of Biological Chemists. Proceedings. Vol. I, etc. Bangalore 1936+. (*Reference.*) From the Biochemical Society.
- KHARKOV. Université d'État. Travaux de l'Institut de Chimie. Vol. I, etc. Kharkov 1936+. (*Reference.*) [In Ukrainian. French résumés.]
- MORRELL, R. S. [and others]. Synthetic resins and allied plastics. London 1937. pp. xii + 417. ill. 28s. net. (*Recd.* 2/11/37.) From the Publishers: Oxford University Press.
- NAUNTON, W. J. S. Synthetic rubber. London 1937. pp. xvi + 162. ill. 7s. 6d. net. (*Recd.* 21/10/37.)
- NIE, WILLEM LEENDERT JOHANNES DE. De ontwikkeling der Noord-Nederlandsche textielververij van de veertiende tot de achttiende eeuw. Leiden 1937. pp. xx + 310 + lxxvi. (*Reference.*) From the Author.
- PARTINGTON, J. R. A short history of chemistry. London 1937. pp. xiv + 386. ill. 7s. 6d. net. (*Recd.* 8/11/37.) From the Author.
- SOCIETY OF PUBLIC ANALYSTS AND OTHER ANALYTICAL CHEMISTS. The Analyst. Decennial Index. Vols. LI-LX (1926-1935). Cambridge [1937]. pp. 467. (*Reference.*) 25s. net. From the Council.
- SOUTH AUSTRALIA. Department of Chemistry. Bulletin No. 7. Gypsum and plaster of Paris. By D. C. WINTERBOTTOM. Adelaide 1917. pp. 161. ill. (Second copy.) From Mr. E. C. Powell.
- UNION CATALOGUE of the periodical publications in the University libraries of the British Isles with their respective holdings,

- excluding titles in the World List of Scientific Periodicals, 1934. Compiled on behalf of the Joint Standing Committee on Library Co-operation by MARION G. ROUPELL. London 1937. pp. xii + 712. (*Reference.*) 52s. 6d. net. From Mr. F. W. Clifford.
- WEST VIRGINIA PULP & PAPER Co. Industrial Chemical Sales Division. The modern purifier [activated carbon]. New York 1937. pp. vi + 98. ill. (*Recd.* 27/10/37.) From the Publishers.

II. By Purchase.

- BAILEY, KENNETH C. The retardation of chemical reactions. London 1937. pp. viii + 479. ill. 26s. net. (*Recd.* 21/10/37.)
- BINKLEY, ROBERT C. Manual on methods of reproducing research materials. Ann Arbor 1936. pp. xiv + 207. ill. (*Reference.*) 16s. net.
- CARTWRIGHT, W., COLLIER, T. W., and CHARLESWORTH, A. The analysis of non-ferrous metals and alloys. London 1937. pp. x + 296. 8s. net. (*Recd.* 21/10/37.)
- CURRIE, J. R. Manual of public health laboratory practice. Edinburgh 1936. pp. xx + 378. ill. 21s. (*Recd.* 21/10/37.)
- DHÉRÉ, CH. La fluorescence en biochimie. Paris 1937. pp. xii + 318 + 27 plates. 80 fr. (*Recd.* 8/11/37.)
- FINDLAY, ALEXANDER. A hundred years of chemistry. London 1937. pp. 352. ill. 15s. net. (*Recd.* 21/10/37.)
- FRIEDMANN, E. Sterols and related compounds: a series of three lectures. Cambridge 1937. pp. x + 100. 7s. 6d. net. (*Recd.* 21/10/37.)
- HAITINGER, MAX. Die Fluoreszenzanalyse in der Mikrochemie. Wien 1937. pp. viii + 192. M. 8. (*Recd.* 2/11/37.)
- HALE-WHITE, WILLIAM. Materia medica, pharmacy, pharmacology, and therapeutics. 23rd edition. Revised by A. H. DOUTHWAITE. London 1937. pp. xii + 562. 10s. 6d. net. (*Recd.* 21/10/37.)
- HEDGES, ERNEST S. Protective films on metals. 2nd edition. London 1937. pp. xvi + 397. ill. 21s. net. (*Recd.* 21/10/37.)
- HETHERINGTON, A. L. Chinese ceramic glazes. Cambridge 1937. pp. x + 76. ill. 10s. 6d. net. (*Recd.* 21/10/37.)
- HOUWINK, R. Elasticity, plasticity, and structure of matter. With a chapter on the plasticity of crystals by W. G. BURGERS. Cambridge 1937. pp. xviii + 376. ill. 21s. net. (*Recd.* 26/10/37.)

INSTITUTION OF PETROLEUM TECHNOLOGISTS. Petroleum technology in 1936. Edited by F. H. GARNER. London 1937. pp. viii + 326. ill. (*Reference.*) 7s. 6d. net.

INTERNATIONAL SOCIETY OF LEATHER TRADES' CHEMISTS. Wetting and detergency: scientific and technical aspects. London 1937. pp. vi + 210. ill. 15s. net. (*Recd.* 21/10/37.)

JOST, WILHELM. Diffusion und chemische Reaktion in festen Stoffen. Dresden 1937. pp. viii + 231. ill. *M.* 21. (*Recd.* 8/11/37.)

KARRER, PAUL. Lehrbuch der organischen Chemie. 5th edition. Leipzig 1937. pp. xxiv + 973. *M.* 36. (*Recd.* 8/11/37.)

NIELSEN, ANDREAS. Chlorkautschuk und die übrigen Halogenverbindungen des Kautschuks. Leipzig 1937. pp. viii + 123. ill. *M.* 7.20. (*Recd.* 8/11/37.)

NOKES, M. C. Modern glass working and laboratory technique. London 1937. pp. xiv + 153. ill. 7s. 6d. net. (*Recd.* 21/10/37.)

NORMAN, A. G. The biochemistry of cellulose, the polyuronides, lignin, etc. Oxford 1937. pp. x + 232. 15s. net. (*Recd.* 21/10/37.)

RAZI, [A. B. M. IBN Z.] al-. Geheimnis der Geheimnisse. Translated, with introduction and explanation, by JULIUS RUSKA. Berlin 1937. pp. xvi + 246. *M.* 38.80. (*Recd.* 8/11/37.)

SCHOELLER, W. R. The analytical chemistry of tantalum and niobium. The analysis of their minerals and the application of tannin in gravimetric analysis. London 1937. pp. xvi + 198. 21s. net. (*Recd.* 21/10/37.)

SMITH, [ALEXANDER]. Inorganic chemistry. 2nd edition. By JAMES KENDALL. [New York] 1937. pp. xxiv + 954. ill. \$4. (*Recd.* 21/10/37.)

SMITH, ERNEST A. A manual on dental metallurgy. 5th edition. London 1937. pp. xvi + 320. ill. 12s. 6d. net. (*Recd.* 21/10/37.)

SMITHELLS, COLIN J. Gases and metals: an introduction to the study of gas-metal equilibria. London 1937. pp. viii + 218. ill. 18s. net. (*Recd.* 21/10/37.)

SOCIETY FOR THE STUDY OF ALCHEMY AND EARLY CHEMISTRY. Ambix. Vol. I, etc. London 1937+. (*Reference.*) 24s. per annum.

VALKÓ, EMMERICH. Kolloidchemische Grundlagen der Textilveredlung. Berlin 1937. pp. xii + 701. ill. *M.* 60. (*Recd.* 8/11/37.)

III. Pamphlets.

BOARD OF EDUCATION. *Science Museum*. Very low temperatures. Book 3. A symposium of lectures. Edited by T. C. CRAWHALL. London 1937. pp. 73. ill.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 755-1937. Apparatus and methods for the determination of the percentage of fat in milk and milk products by the Babcock method. 2 parts. pp. 48, 31. ill.

HEIMANN, PAUL. Recherches sur la synthèse de la 2-4-dihydroxyquinoléine et de ses dérivés. Contribution à l'étude de leur constitution. Dijon 1937. pp. 68.

IMPERIAL INSTITUTE. *Mineral Resources Department*. Reports on the mineral resources of the British Empire and foreign countries. Asbestos. 2nd edition. By G. E. HOWLING. London 1937. pp. 88.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. "Chemical changes and chances." By SIR MARTIN FORSTER. 20th Streatfeild Memorial Lecture. London 1937. pp. 21.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Miscellaneous Publications. No. 6. The rôle of technical information in industrial research and development. By C. E. HOMER and E. S. HEDGES. (From the *Comm. Congrès Mondial Doc. Univ.*, 1937.)

— Technical Publications. Series D. No. 3. Mechanical properties of some tin bronzes. By H. LEPP. London 1937. pp. 11. ill.

JAKOBS, HENDRIK. De structuurbepaling van agatheen-dizuur. Leiden 1937. pp. xii + 72.

KNAPP, A. W. [Editor.] Vitamin D in cacao shell (commercial cocoa bean shell). Bournville [1937]. pp. 64. ill.

McFADYEN, A. D. Carleton Ellis. (From the *J. Patent Office Soc.*, 1937.)

MELLON INSTITUTE. Addresses at the exercises and science symposium during the dedication of the new building. Pittsburgh 1937. pp. vi + 71.

NIKITIN, ALEXANDER ALEXIS. Zeolitic copper compounds as fungicides. New York 1937. pp. 72. ill.

UNION INTERNATIONALE DE CHIMIE. *Commission des Atomes*. Deuxième Rapport. Table internationale des isotopes stables. Paris 1937. pp. 19.

MEETINGS OUTSIDE LONDON.*LEEDS.*

Tuesday, January 25th, 1938, at 7 p.m. Meeting for the reading of papers in the Lecture Theatre of the New Chemistry Building of the University.

LIVERPOOL.

Friday, January 28th, 1938, at 6 p.m. Lecture on "The Chemical Structure and Physiological Action of Drugs," by Dr. H. Raymond Ing, M.A., in the Chemistry Lecture Theatre of the University.

NEWCASTLE AND DURHAM.

Friday, December 3rd, 1937, at 7.15 p.m. Dinner-Dance to be held jointly with the Local Sections of the Institute of Chemistry and Society of Chemical Industry, at the University Union, College Road, Newcastle-upon-Tyne, 2.

MEETINGS IN LONDON.

Thursday, December 2nd, 1937, at 5 p.m.

Discussion on “**The Influence of Structure on the Action of Parasiticideal Drugs,**” to be opened by Dr. T. A. Henry. The following have agreed to take part in the Discussion: Dr. J. W. Trevan, Dr. F. L. Pyman, Sir Gilbert Morgan, Dr. E. Walton, Mr. W. H. Gray, and Dr. G. A. H. Buttle.

Fellows are reminded that the discussion will commence at **5 p.m.** and that it may be adjourned and continued after dinner at the discretion of the President. Tea will be served at **4.30 p.m.**

It has been arranged for Dinner to be served at Stewart's Restaurant, 50, Old Bond Street (Corner of Bond Street and Piccadilly), at about 7.30 p.m. The price of the dinner will be 4s. 6d., including coffee, and Fellows are asked to pay at the Restaurant. Fellows wishing to attend the dinner should advise the Assistant Secretary beforehand.

If the Discussion is continued after dinner, it will be held either in a private room at Stewart's Restaurant, or in the Society's Rooms.

Thursday, December 16th, 1937, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, January 20th, 1938, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, January 27th, 1938, at 5.30 p.m.

Sixth Pedler Lecture entitled “**Synthesis of Polyenes**” by Professor Dr. Richard Kuhn, in the **Meeting Hall of the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C. 1.**

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, December 2nd, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death, of the following Fellows :

	Elected.	Died.
Duncan Scott Macnair	1885	November 27th, 1937.
Kotaro Shimomura	1896	October 21st, 1937.

Mr. C. L. Claremont was formally admitted a Fellow of the Society.

Forms of Recommendation for Fellowship were read for the first time in favour of :

Norman Frederick Goodway, Ph.D., M.Sc., 35, King's Drive, Surbiton.
 David Christie Martin, B.Sc., 13, Kidd Street, Kirkcaldy, Fife.
 Henry Wilfred Lewis Phillips, B.A., A.I.C., Glencoin, West Avenue, Stockton Heath, Warrington.
 Joseph Escott Rocca, B.Sc., 30, Greenbank Drive, Edinburgh 10.
 James Wilson Tullo, B.Sc., F.I.C., St. Brendan's Coolock, co. Dublin.
 David Wyllie, B.Sc., Castlemains, Gifford, East Lothian.

and for the second time in favour of 11 candidates.

Dr. A. I. Vogel and Dr. M. Barent were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected as Fellows :

Moolamannil Cherian Abraham, B.Sc. Charles Ambrose Adams, B.Sc., F.I.C. Daniel Chellathurai Arulanantham, B.Sc. Geoffrey Cecil Barker, B.A. Geoffrey Robert Barker. Charles Edwin Barton, B.Sc. Albert William Baxter, B.Sc. Walter Francis Beech, B.Sc. Donald Maurice Besly, B.A. Stanley Cecil Bevan, B.Sc. George Frederick Birks. George Douglas Bond, B.Sc., A.I.C. Charles Herbert Bottoms. Ivor Lewis Bradley. Otho Frederick Charles Bromfield. Victor Charles Ernest Burnop, B.Sc., A.R.C.S. Charles James Bushrod, M.Sc. Hugh Campbell. Meruyn George Church, B.Sc. Geoffrey Edward Coates. Richard Norton Coleman, B.Sc. James Gordon Cook, B.Sc. George Bristow Cooke, B.A., LL.B. Frank Henry Day, M.Sc. Charles Enrique Dent, Ph.D., D.I.C., A.R.C.S., A.I.C. David Morris Edwards, B.Sc. Donald Frederick Elliott, A.R.C.S. Bernard Ellis, B.Sc. Cecilie Mary French, B.Sc.	Helle Elpiniki Georgiadis, B.Sc. Sudhir Kumar Ghose, M.B., D.T.M. Edmund George Noel Greaves, B.Sc. Roland Hall Griffith, B.A., D.Phil. Jack Oatway Harris, B.Sc. Anthony Bernard Hart, B.Sc. Frank Hiron, B.Sc. Eric Hoggarth, B.Sc. Walter Hüchel, Prof., Dr.Phil. Richard Sibley Hughes, B.Sc., A.R.C.S. Robert Farquhar Scudamore Hutchison, B.Sc. David Hugh Oakley John. Edward Kahn, B.Sc. Chia Si Lu, B.Sc. Norman Angus McKenna, B.A. Ronald John MacLellan, B.Sc. Francis Joseph McQuillin, B.A., B.Sc. Kendall Morgan Madigan. John Francis Martin, B.Sc., A.R.C.S. Ewart Mather, B.Sc., F.I.C. John William Tyler Merewether. Kurt Otto Adolf Michaelis, B.Sc., A.R.C.S. Bernard Alfred Middleton, B.Sc. John Arnold Mitchell, M.Sc., Ph.D. Adolf Neuhäusser, D.Phil. Thomas Percy Nevell, B.Sc. Ronald William Hamilton O'Donnell, Ph.D., A.I.C. Harry Tacon Openshaw, B.A., B.Sc. William Albert Patterson.
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Denis Rudolf Pelmore, B.A.
 Cedric Paul Percy.
 Robert Eugene Pfaumer, B.S., M.A.
 Richard Charles Pink, B.Sc.
 Winifred Margaret Helen Poole, B.A.
 Akhouri Nareshwari Prasad, M.Sc.
 Charles Rossall Pye, B.Sc.
 Harry Shapiro, B.Sc.
 Edwin Albert Shearing, B.Sc.
 Har Swarup Singhal, L.M.P.
 Robert Arthur Sutton, B.Sc.

Hugh Stott Taylor, Prof., D.Sc., F.R.S.
 Bryan Atkinson Toms, M.Sc.
 Denys Grahame Turner.
 Ian Dalglish Wardrop.
 Ian Cunliffe Whitfield, B.Sc.
 Richard Tecwyn Williams, Ph.D.
 Leslie Ballentyne Wood, B.Sc.
 Francis Joseph Woodman, B.Sc.
 Derek McLean Wyllie.
 Wilfred Walter Yarnold, M.Sc.

A Discussion on "The Influence of Structure on the Action of Parasitocidal Drugs" was opened by Dr. T. A. Henry, and continued by Dr. J. W. Trevan, Dr. F. L. Pyman, Sir Gilbert Morgan, Mr. W. H. Gray, Dr. E. Walton, Dr. G. A. H. Buttle, Dr. Harold King, Dr. W. H. Linnell, and Professor R. Robinson. A vote of thanks to Dr. Henry was moved from the Chair, and carried with acclamation.

Ordinary Scientific Meeting, Thursday, December 16th, 1937, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., President, in the Chair.

The PRESIDENT referred to the loss sustained by the Society, through death, of the following fellows :

	Elected.	Died.
Joseph Cowper	1888	Nov. 28th, 1937.
Robert Oswald Hall	1937	Nov. 28th, 1937.
Arthur Hutchinson	1890	Dec. 12th, 1937.
Andrew Young	1903	Nov. 7th, 1937.

It was announced :

1. That the congratulations of the Society had been conveyed to Messrs. S. Martineau and A. R. Ormiston, who completed 50 years of Fellowship on December 1st, 1937.

2. That the Council had conveyed the thanks of the Society to the Chemical Council for a grant of £800 towards the cost of the publications for 1937, in addition to £80 already granted for including summaries in the Journal.

3. That representatives of the Society on other bodies for the year 1938 had been appointed as follows :

Bristol University Court : Professor F. G. Donnan.

British National Committee for Chemistry : President, Treasurer, and Senior Secretary.

British Standards Institution : Council of Chemical Division, Dr. J. J. Fox. *Committees* : Specifications for Materials and Plant used in Electroplating, Dr. U. R. Evans. Standardisation of Scientific Glassware, Dr. J. J. Fox and Dr. E. B. Hughes. Standards for use in the Dairying Industry, Mr. A. L. Bacharach and Mr. Eric Voelcker. Chemical Symbols and Abbreviations, Dr. C. F. Goodeve.

Bureau of Chemical and Physiological Abstracts : Mr. F. P. Dunn, Dr. G. A. R. Kon, Professor R. G. W. Norrish, and the Senior Secretary, with the Treasurer *ex-officio*.

City and Guilds of London Institute : The President.

Faraday Society : Colloid Committee, Mr. D. C. Henry.

Home Office : Air Raid Precautions Department, Mr. J. Davidson Pratt.

Joint Library Committee : Professor H. Bassett, Dr. O. L. Brady, Professor J. W. Cook, Professor C. H. Desch, Mr. M. B. Donald, Professor A. C. G. Egerton, Dr. H. J. Emeléus, Dr. C. F. Goodeve, Professor C. R. Harington, Dr. T. A. Henry, Dr. E. W. McClelland, Dr. W. H. Mills, Dr. E. E. Turner, Dr. J. C. Withers.

Lawes Agricultural Trust : Committee of Management, Dr. E. F. Armstrong.

The following were formally admitted Fellows of the Chemical Society : J. Chatt, H. Shapiro, W. F. Beech, B. Ellis, A. W. Baxter, A. B. Hart, C. H. Bottoms, F. W. Chat-taway, D. McLean Wyllie, G. S. Smith, and W. H. C. Simmonds.

Forms of Recommendation for Fellowship were read for the first time in favour of :

George William Cooke, B.Sc., Kirby Holt, Milton, Derby.
 Norman Charles Bailie Hay, B.Sc., A.R.C.S., c/o George Henderson & Co., Ltd., 101/1, Clive Street, Calcutta, India.
 Gordon Ivan Hobday, B.Sc., 43, Curzon Street, Long Eaton, Notts.
 Neil Atkinson Iliif, 90, North End House, Fitzjames Avenue, W. 14.
 Ivan Douglas Lamb, M.Sc.Tech., A.I.C., 9, Baldwyns Park, Bexley, Kent.
 James Leicester, M.Sc., c/o Mrs. Tipping, 36, Cavendish Road, Didsbury, Manchester.
 Frederick John Robinson, 46, Laitwood Road, Balham, S.W. 12.
 George Alan Snow, B.Sc., 275, Wanstead Park Road, Ilford, Essex.
 Douglas Sandford Stephens, B.Sc.Tech., Sandford, Moss Lane, Bramhall, Cheshire.
 Thomas Gordon Herd Thomson, B.Sc., 7, Tollgate, Brucefield, Dunfermline, Fife.
 Chester Woodleigh Small, B.Sc., M.A., Acadia University, Wolfville, N.S., Canada.

and also of the following whose application has been accepted by the Council under Bye-Law I (2) :

Raymond Charles Hutchinson, B.Sc., Townsville, Queensland, Australia.

Forms of Recommendation for Fellowship in favour of six candidates were read for the second time.

The following papers were read :

- “ The constitution of complex metallic salts. Part VI. The constitution of the phosphine and arsine derivatives on the silver and aurous halides. The configuration of the co-ordinated argentous and aurous complex.” By F. G. MANN, A. F. WELLS, and D. PURDIE.
- “ The stereochemistry of quadricovalent atoms : cobalt and manganese.” By E. G. COX, A. J. SHORTER, W. WARDLAW, and W. J. R. WAY.
- “ (a) Stereochemistry of platotetrammines.” By H. D. K. DREW, F. S. H. HEAD, and H. J. TRESS, and “ (b) Evidence on the structure of cis-(β) diamminoplatinous chloride.” By F. W. CHATTAWAY and H. D. K. DREW.

IMPORTANT NOTICES

BRITISH CHEMICAL AND PHYSIOLOGICAL ABSTRACTS “A.”

Fellows are reminded that forms ordering British Chemical and Physiological Abstracts “A” for 1938 should be completed and returned to the Assistant Secretary **as soon as possible**. **Abstracts for 1938 will not be supplied to any Fellow until the form has been returned.** Copies of the form may be obtained from the Assistant Secretary.

ANNUAL REPORTS FOR 1937, VOL. XXXIV.

Applications for the *Annual Reports* for 1937, at the reduced price of 5s. 6d., should reach the Assistant Secretary by January 15th, 1938.

“CURRENT TITLES.”

The Society has been asked to draw the attention of Fellows to a new journal entitled *Current Titles*, published in America, providing a monthly register of titles of recently published papers on Engineering, Physics, Chemistry, and Geology. Further particulars including subscription rates can be obtained from Mr. Arthur C. Stern, Editor, *Current Titles*, 928, Broadway, New York, U.S.A.

BOARD OF TRADE.

The Treasury have made an Order under Section 10(5) of the Finance Act, 1926 exempting Dinitro-orthocresol from Key Industry Duty from December 8th, 1937, until December 31st, 1938.

The Treasury Order, which will be entitled The Safeguarding of Industries (Exemption) No. 9 Order, 1937, will shortly be published by H.M. Stationery Office.

Representation has been made to the Board of Trade for the exemption of Ethyl benzoyl-benzoate from the duty imposed by Section I of the Safeguarding of the Industries Act, 1921.

Any communication should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W. 1., by the 16th January, 1938.

A list of scientific apparatus and fine chemicals on which the exemption of the Key Industry has been extended until the 31st December, 1938, has also been received and has been placed in the Library.

BRITISH STANDARDS INSTITUTION.

Draft British Standard Specification C.E.(C) 5463 for Burettes and Bulb Burettes and draft British Standard C.E.(C) 6004, Methods for the Sampling of Dairy Products have been received for technical comment.

Fellows desiring to comment on the Specification for Burettes and Bulb Burettes should communicate direct with the British Standards Institution, 28, Victoria Street, London, S.W. 1, by April 28th, 1938, and on the Methods for the Sampling of Dairy Products by June 9th, 1938. Reference as above should be given in each case.

List of papers, or abstracts thereof, received between November 18th and December 16th, 1937. (This list does not include the titles of papers which have been read at an Ordinary Scientific Meeting, or which have appeared in the Journal.)

- “Chemotherapeutic studies in the acridine series. Part III. 4-Amino-, 1:3-, 1:7-, and 3:6-diaminoacridines.” By A. ALBERT and W. H. LINNELL.
- “Studies on the Michael reaction. Part II. The nature of the condensation product from ethyl benzylmalonate and ethyl fumarate.” By J. A. GARDNER and H. N. RYDON.
- “Studies on the Michael reaction. Part III. General considerations: the addition of alkylmalonic esters to some unsaturated diketones.” By J. A. GARDNER and H. N. RYDON.
- “Studies on the Michael Reaction. Part IV. The addition of alkylmalonic esters to some α -substituted Δ^{α} -unsaturated esters: general conclusions.” By J. A. GARDNER and H. N. RYDON.
- “Studies in the sterol group. Part XXXIV. The dibromination of 6-ketocholestanyl acetate.” By I. M. HEILBRON, H. JACKSON, E. R. H. JONES, and F. S. SPRING.
- “The action of the Oppenauer reagent on primary alcohols, including vitamin-A.” By J. W. BATTY, A. BURAWOY, S. H. HARPER, I. M. HEILBRON, and W. E. JONES.
- “Union of aryl nuclei. Part I. Some extensions of the Gomberg reaction.” By W. S. M. GRIEVE and D. H. HEY.
- “Union of aryl nuclei. Part II. Chloro-, bromo-, and nitro-fluorenes.” By I. M. HEILBRON, D. H. HEY, and R. WILKINSON.
- “Nitrosoacylarylamines. Part I. The decomposition of nitrosoacetanilide in solution.” By E. C. BUTTERWORTH and D. H. HEY.
- “An extension of the Macleod equation.” By D. T. LEWIS.
- “The chemistry of natural rubber. Part I. The isolation of the constituents.” By K. C. ROBERTS.
- “The chemistry of natural rubber. Part II. Caoutchene and caoutchol and the intermolecular structure of rubber.” By K. C. ROBERTS.
- “Anthoxanthins. Part XVI. Synthesis of herbacetin.” By L. J. GOLDSWORTHY and R. ROBINSON.
- “Structure of the copper lakes of azo-dyes.” By H. D. K. DREW and J. K. LANDQUIST.

- "Aneurin. Part IX. A new synthesis of thiochrome. Note on the synthesis of aneurin." By F. BERGEL and A. R. TODD.
- "The configuration of heterocyclic compounds. Part VII. Some derivatives of phenox-tellurine." By (MISS) I. G. M. CAMPBELL and E. E. TURNER.
- "Acid salts of monobasic organic acids. Part IV: The salting out effect." By J. D. M. ROSS, T. J. MORRISON, and C. JOHNSTONE.
- "The synthesis of α -6-methoxytryptophan and of harmine, with a note on the action of acetaldehyde on tryptophan." By D. G. HARVEY and W. ROBSON.
- "The mesomeric effect of the sulphoxide group." By D. LL. HAMMICK and R. B. WILLIAMS.
- "The dissociation constant of mandelic acid in water." By W. H. BANKS and C. W. DAVIES.
- "Molecular solution volumes of optical isomers. Reply to a recent note by William H. Banks." By T. S. PATTERSON and A. H. LAMBERTON.
- "Prototropy in relation to the exchange of hydrogen isotopes. Part III. Comparison of the rates of racemisation and of hydrogen exchange in a ψ -acidic ketone." By S. K. HSU, C. K. INGOLD, and C. L. WILSON.
- "Prototropy in relation to the exchange of hydrogen isotopes. Part IV. Isomerisation and exchange in methyleneazomethines." By E. DE SALAS and C. L. WILSON.
- "Simultaneous adsorption from dilute aqueous solutions." By W. J. JONES, R. A. HUDSON, and J. T. JONES.
- "The synthesis of polyterpenoid compounds. Part IV." By J. W. COOK and C. A. LAWRENCE.
- "Stereochemistry of the acenaphthylene and tetrahydroacenaphthylene glycols. Part I." By (MISS) K. M. JACK and H. G. RULE.
- "Solubility influences. Part V. The influence of aliphatic alcohols on the solubility of ethyl acetate in water." By D. G. BEECH and S. GLASSTONE.
- "The constitution and isomerism of certain triazole derivatives in the light of the Bredt rule and the theory of resonance." By A. SCHÖNBERG.
- "Occurrence of kaempferol in Crocus." By J. R. PRICE, (MRS.) G. M. ROBINSON, and R. ROBINSON.
- "Experiments on the synthesis of substances related to the sterols. Part XIX." By R. ROBINSON and J. WALKER.
- "Direct introduction of deuterium into the aromatic nucleus. Part II. Orientation by certain substituents." By A. P. BEST and C. L. WILSON.
- "The structure of β -(*cis*-)diamminoplatinous chloride: evidence based on the preparation of the palladochloride." By F. W. CHATTAWAY and H. D. K. DREW.
- "The solubility of iodine pentoxide in anhydrous hydrogen fluoride and the possible existence of 'hydrofluorates' of iodine pentoxide." By K. R. WEBB.
- " β -Phellandrene." By A. K. MACBETH, G. E. SMITH, and T. F. WEST.
- "Experiments on the synthesis of local anæsthetics. Part III." By S. BAGCHEE, K. N. GAIND, and J. N. RÂY.
- "Acridine derivatives. Part I." By M. L. DHAR, K. S. NARANG, and J. N. RÂY.
- "The spontaneous ignition under pressure of typical knocking and non-knocking fuels: heptane, octane, *isooctane*, diisopropyl ether, acetone, benzene." By M. MACCORMAC and D. T. A. TOWNEND.
- "The unsaturation and tautomeric mobility of heterocyclic compounds. Part XI. α - and β -Naphthoxazole and 5-bromobenzoxazole derivatives. The ultra-violet absorption spectra of some tautomeric selenazoles." By R. D. DESAI, R. F. HUNTER, and A. R. K. KHALIDI.
- "Polycyclic aromatic hydrocarbons. Part XVI. 1:2:3:4-Dibenzphenanthrene." By C. L. HEWETT.
- "The functional relation between the constants of the Arrhenius equation. Solvent effects in a Diels-Alder addition." By R. A. FAIRCLOUGH and C. N. HINSHELWOOD.
- "Diamagnetic anisotropy of conjugated compounds." By (MRS.) K. LONSDALE.

ADDITIONS TO THE LIBRARY.

I. *Donations.*

BIOCHIMIA. Vol. 1, etc. Moscow 1936 +. [In Russian. Summaries in English, French, and German.] (*Reference.*)

From the Bureau of Chemical Abstracts.

BRÖNSTED, J. N. Physical chemistry. Translated . . . by R. P. BELL. London 1937. pp. xvi + 390. ill. 12s. 6d. net. (*Recd.* 30/11/37.)

From the Publishers: Messrs. William Heinemann.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Water Pollution Research*. Technical Paper No. 6. Survey of the River Tees. Part 3. The non-tidal reaches—chemical and biological. By R. W. BUTCHER, J. LONGWELL, and F. T. K. PENTELOW. London 1937. pp. xiv + 189. ill. (*Reference.* 12s. 6d. net.

From the Director.

MEDICAL RESEARCH COUNCIL. *Industrial Health Research Board*. Report No. 80. Toxicity of industrial organic solvents. Summaries of published work, compiled by ETHEL BROWNING under the direction of the Committee on the Toxicity of Industrial Solvents. London 1937. pp. iv + 388. 7s. 6d. net. (*Recd.* 18/11/37.)

From the Medical Research Council.

MENSCHUTKIN, B. N. Biography of Michael Wassiljewitsch Lomonossow. Moscow 1937. pp. 238. ill. [In Russian.] (*Recd.* 30/11/37.)

From the Author.

ORGANIC CHEMICAL INDUSTRY, THE. Vol. 3, etc. Moscow 1937 +. [In Russian.] (*Reference.*)

From the Bureau of Chemical Abstracts.

ROYAL COLLEGE OF SCIENCE. Scientific Journal. Vol. 1, etc. South Kensington 1931 +. (*Reference.*)

From the Joint Publication Board.

SOCIETA ITALIANA DI BIOLOGIA SPERIMENTALE. Archivio di Scienze Biologiche. Vol. 23, etc., Bologna 1937 +. (*Reference.*)

From the Biochemical Society.

WATSON, H. B. Modern theories of organic chemistry. Oxford 1937. pp. viii + 218. ill. 15s. net. (*Recd.* 26/11/37.)

From the Author.

II. *By Purchase.*

ARCHBUTT, S. L., and PRYTHERCH, W. E. Effect of impurities in copper. London 1937. pp. xvi + 134. ill. 12s. 6d. net. (*Recd.* 18/11/37.)

BRÜCKNER, HORST. Technische Gase und deren Eigenschaften. München 1937. pp. xii + 146 + 206. ill. M. 27.50. (*Recd.* 6/12/37.)

BURK, ROBERT E. [and others]. Polymerization and its applications in the fields

of rubber, synthetic resins, and petroleum. (American Chemical Society, Monograph Series.) New York 1937. pp. 312. ill. \$7.50. (*Recd.* 18/11/37.)

BURKHARDT, ARTHUR. Technologie der Zinklegierungen. Berlin 1937. pp. x + 256. ill. M. 31.50. (*Recd.* 6/12/37.)

CLARK, C. H. DOUGLAS. The fine structure of matter. The bearing of recent work on crystal structure, polarization and line spectra. Being Vol. II of a comprehensive treatise of atomic and molecular structure. Part 1. X-rays and the structure of matter. London 1937. pp. xxxvi + 216 + xxxvii to lxxii. ill. 15s. net. (*Recd.* 18/11/37.)

DAVIS, CARROLL C., and BLAKE, JOHN T. [Editors.] The chemistry and technology of rubber. (American Chemical Society, Monograph Series.) New York 1937. pp. 941. ill. \$15. (*Recd.* 18/11/37.)

DESCH, CECIL H. Metallography. 4th edition. London 1937. pp. viii + 402. ill. 21s. net. (*Recd.* 18/11/37.)

FEIGL, FRITZ. Qualitative analysis by spot tests: inorganic and organic applications. Translated by JANET W. MATTHEWS. Amsterdam 1937. pp. x + 400. ill. 30s. net. (*Recd.* 18/11/37.)

GUSTAVSON, K. H. [Editor.] Stiasny Festschrift. Darmstadt 1937. pp. 432. ill. M. 15. (*Recd.* 8/12/37.)

HADERT, HANS. Kaseinleim und Kasein-farbenbindemittel. 2nd edition. Berlin 1937. pp. 124. ill. M. 7.50. (*Recd.* 6/12/37.)

HAND- UND JAHRBUCH DER CHEMISCHEN PHYSIK. Vol. I. Part 2. Quantentheorie des Elektrons und der Strahlung. By H. A. KRAMERS. Leipzig [1937]. pp. xii, 223 to 502. (*Recd.* 2/12/37.)

HERZBERG, GERHARD. Atomic spectra and atomic structure. Translated with the cooperation of the author by J. W. T. SPINKS. [New York] 1937. pp. xvi + 257. ill. \$4.25. (*Recd.* 18/11/37.)

JONES, ARTHUR. Cellulose lacquers, finishes and cements: their history, chemistry, manufacture, analysis, and testing, industrial uses and applications, with some notes on synthetic resin lacquers. London 1937. pp. x + 418. ill. 21s. net. (*Recd.* 18/11/37.)

KINZEL, A. B., and CRAFTS, WALTER. The alloys of iron and chromium. Vol. I. Low-chromium alloys. New York 1937. pp. xvi + 535. ill. \$6. (*Recd.* 18/11/37.)

KRAUSE, HUGO. Metallfärbung. Die wichtigsten Verfahren zur Oberflächenfärbung und zum Schutz von Metallgegenständen.

2nd edition. Berlin 1937. pp. viii + 183. M. 8.80. (*Recd.* 6/12/37.)

MÜLLER, ROBERT. Allgemeine und technische Elektrochemie nichtmetallischer Stoffe. Wien 1937. pp. x + 440. ill. M. 30. (*Recd.* 6/12/37.)

NEEDHAM, JOSEPH, and GREEN, DAVID E. [Editors.] Perspectives in biochemistry. Thirty-one essays presented to SIR FREDERICK GOWLAND HOPKINS by past and present members of his Laboratory. Cambridge 1937. pp. x + 361. ill. 15s. net. (*Recd.* 18/11/37.)

RIEGEL, EMIL RAYMOND. Industrial chemistry. 3rd edition. New York 1937. pp. 851. ill. \$5.75. (*Recd.* 18/11/37.)

ROBERTSON, G. ROSS. Laboratory practice of organic chemistry. New York 1937. pp. xii + 328. ill. \$2.25. (*Recd.* 18/11/37.)

VANNOTTI, A. Porphyrine und Porphyrinekrankheiten. Berlin 1937. pp. viii + 286. ill. M. 27. (*Recd.* 6/12/37.)

VOGEL, ARTHUR I. A text-book of qualitative chemical analysis. London 1937. pp. xii + 383. ill. 7s. 6d. net. (*Recd.* 18/11/37.)

VOGEL, RUDOLF. Die heterogenen Gleichgewichte. Leipzig 1937. pp. xxiv + 737. ill. M. 68. (*Recd.* 6/12/37.)

WALKER, WILLIAM H. [and others]. Principles of chemical engineering. 3rd edition. New York 1937. pp. xii + 749. ill. \$5. (*Recd.* 18/11/37.)

WENT, F. W., and THIMANN, KENNETH V. Phytohormones. New York 1937. pp. xii + 294. ill. \$4. (*Recd.* 18/11/37.)

WILLEY, E. J. B. Collisions of the second kind: their rôle in physics and chemistry. London 1937. pp. viii + 150. ill. 10s. 6d. net. (*Recd.* 18/11/37.)

ZHITKOVA, A. S. Some methods for the detection and estimation of poisonous gases and vapors in the air. Edited by S. I. KAPLUN. Translated under direction of JOSEPH B. FICKLEN. Hartford, Conn. 1936. pp. xiv + 198. ill. \$3. (*Recd.* 30/11/37.)

III. Pamphlets.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 756—1937. Apparatus for the determination of small quantities of water by distillation with an immiscible liquid. pp. 13. ill.

— — — No. 757—1937. Methods for testing gelatine. pp. 34. ill.

CANADA. *National Research Council*. Bulletin No. 18. Chemical weed killers: a review. By W. H. COOK and A. C. HALFERDAHL. Ottawa 1937. pp. 111.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Food Investigation*. Special Report No. 45. Microbiology in the preservation of animal tissues. By R. B. HAINES. London 1937. pp. iv + 85. ill.

— — — *Fuel Research*. Technical Paper No. 46. The use of coke in open domestic grates. By J. S. HALES. London 1937. pp. vi + 50. ill.

GLASGOW UNIVERSITY ALCHEMISTS' CLUB. *The Alchemist*. Vol. XII. Special No. [Memento of GEORGE GERALD HENDERSON.] Glasgow 1937. pp. 20. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Technical Publications. Series A. No. 65. Stannic oxide as opacifier in wet enamels. By L. STUCKERT. London 1937. pp. 81. ill.

MEETINGS OUTSIDE LONDON.*ABERDEEN.*

Friday, February 4th, 1938, at 6 p.m. Joint meeting with the Institute of Chemistry. Lecture on "Alchemy in Scotland" by Professor John Read, M.A., Sc.D., F.R.S., in the Chemistry Department of Marischal College.

The Lecture will be followed by an informal dinner at the Palace Hotel, at 7.30 for 7.45 p.m. The price of the dinner will be 5s. 6d., inclusive of gratuities, but not including wine. Further particulars can be obtained from Mr. R. Craven, B.Sc., A.R.C.S., F.I.C., 2, Richmondhill Gardens, Aberdeen.

BIRMINGHAM.

Monday, February 7th, 1938, at 5 p.m. Lecture on "The Thermal Decomposition of Solids" by Professor W. E. Garner, D.Sc., F.R.S.

Monday, February 14th, 1938, at 5 p.m. Lecture by Professor I. M. Heilbron, D.S.O., D.Sc., F.R.S.

These Lectures will be held under the auspices of the Society and the Birmingham University Chemical Society in the Chemistry Lecture Theatre of the University, Edgbaston.

GLASGOW.

Friday, February 4th, 1938, at 7.30 p.m. Meeting for the reading of papers at the Royal Technical College, 204, George Street, Glasgow.

LEEDS.

Tuesday, January 25th, 1938, at 7 p.m. Meeting for the reading of papers in the Lecture Theatre of the New Chemistry Building of the University.

LIVERPOOL.

Friday, January 28th, 1938, at 6 p.m. Lecture on "The Chemical Structure and Physiological Action of Drugs" by Dr. H. Raymond Ing, M.A., in the Chemistry Lecture Theatre of the University.

MANCHESTER.

Monday, January 31st, 1938, at 7 p.m. The Sixth Pedler Lecture entitled "Synthesis of Polyenes" (to be given in London on January 27th) will again be delivered by Professor Dr. Richard Kuhn.

Tuesday, February 8th, 1938, at 7 p.m. Joint meeting with the Manchester Section of the Institute of Chemistry and the Manchester University Chemical Society. Lecture on "The Significance of Synthetic Oestrogenic Agents" by Professor E. C. Dodds, M.V.O., D.Sc., F.R.C.P.

These Lectures will be held in the Chemistry Lecture Theatre of the University.

NEWCASTLE AND DURHAM.

Friday, February 18th, 1938, at 7.30 p.m. Scientific Meeting.

Friday, February 4th, 1938, at 6.30 p.m. Bedson Lecture: "Aliphatic Diazo Compounds" by Professor J. Kenner, Ph.D., D.Sc., F.R.S.

These meetings will be held in the Chemistry Lecture Theatre of King's College, Newcastle-upon-Tyne, 2.

NORTH WALES.

Thursday, February 10th, 1938, at 5.30 p.m. Joint meeting with the University College Chemical Society. Lecture on "Some New Aspects of the Organic Chemistry of Nitrogen" by Professor G. R. Clemo, D.Sc., Ph.D., F.R.S., in the Chemistry Lecture Theatre of the University College of N. Wales, Bangor.

SHEFFIELD.

Friday, February 18th, 1938, at 5.30 p.m. Lecture on "Multiple Links" by Professor N. V. Sidgwick, C.B.E., D.Sc., F.R.S., in the Chemistry Department of the University.

SOUTH WALES.

Friday, February 4th, 1938, at 6 p.m. Joint meeting with the University College of Swansea Chemical Society. Lecture on "Structural Crystallography and Chemistry" by Dr. E. G. Cox in the Chemistry Lecture Theatre of the University College, Swansea.

MEETINGS IN LONDON.

Thursday, January 20th, 1938, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, January 27th, 1938, at 5.30 p.m.

Sixth Pedler Lecture entitled "Synthesis of Polyenes" by Professor Dr. Richard Kuhn, in the **Lecture Theatre of the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C. 1.**

Thursday, February 3rd, 1938, at 5 p.m.

Discussion on "Associated Liquids," to be opened by Professor J. D. Bernal, M.A., F.R.S.

The discussion will commence at **5 p.m.** and it may be adjourned and continued after dinner at the discretion of the President. Tea will be served at 4.30 p.m.

It has been arranged for Dinner to be served at Stewart's Restaurant, 50, Old Bond Street (Corner of Bond Street and Piccadilly), at about 7.30 p.m. The price of the dinner will be 4s. 6d., including coffee, and Fellows are asked to pay at the Restaurant. Fellows wishing to attend the dinner should advise the Assistant Secretary by Tuesday, February 1st.

If the Discussion is continued after dinner, it will be held either in a private room at Stewart's Restaurant, or in the Society's Rooms.

Thursday, February 17th, 1938, at 8 p.m.

The Franklin Memorial Lecture, by Professor A. Findlay, M.A., D.Sc.