

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, January 17th, 1935, at 8 p.m., Professor G. T. MORGAN, O.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.
Kenneth F. Armstrong	1933	Jan. 2nd, 1935.
Harford M. Atkinson	1903	Jan. 5th, 1935.
Alexander W. Bain	1900	Jan. 6th, 1935.
John Denton	1906	June 18th, 1934.
Sidney Morgan	1912	Dec. 24th, 1934.
Lewis Gordon Paul	1885	Dec. 13th, 1934.
Charles H. Ridsdale	1882	Dec. 29th, 1934.

The PRESIDENT announced that

1. The names of the members of Council who retire at the next Annual General Meeting, and who are ineligible for the same office until after the lapse of one year, are as follows :

President : Professor G. T. MORGAN.

Vice-Presidents who have filled the office of President : Professor H. B. BAKER and Sir WILLIAM J. POPE.

Ordinary Members of Council—

(a) *Town Members* : Mr. F. P. DUNN and Dr. E. H. FARMER.

(b) *Country Members* : Dr. J. B. FIRTH, Professor F. E. FRANCIS, and Professor I. M. HEILBRON.

In April 1934, the Council accepted the resignation of Professor A. J. Allmand as Ordinary Member of Council (Town Member) and appointed Professor G. I. Finch in his place until the next Annual General Meeting. The Council also accepted in October the resignation of Mr. H. S. Patterson as Ordinary Member of Council (Country Member). These two vacancies, therefore, also fall due to be filled.

The following vacant places in the Council, therefore, fall due to be filled at the Annual General Meeting of the Society, which will be held at Burlington House, Piccadilly, London, W. 1, on Thursday, March 28th, 1935, at 4 p.m. :

President *One vacancy.*

Vice-Presidents who have filled the office of President *Two vacancies.*

Ordinary Members of Council—

(a) *Town Members* (*i.e.* those living within a radius of 50 miles from Charing Cross) *Three vacancies.*

(b) *Country Members* (*i.e.* those living beyond a radius of 50 miles from Charing Cross) *Four vacancies.*

The Council has nominated Dr. N. V. SIDGWICK to the office of President.

2. The Madame Curie Memorial Lecture will be delivered by Dr. A. S. Russell, M.C., M.A., at the Royal Institution (by courtesy of the Managers) on Thursday, February 28th, 1935, at 8 p.m.

Messrs. J. A. Halsby, B. B. Foster, and A. Farkas were formally admitted Fellows of the Chemical Society.

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

Yasuji Asao, "Aichi" Pharmaceutical College, Nagoya, Japan.
 Sydney Hector Bell, Ph.D., A.R.C.S., 25, Mysore Road, Battersea, S.W. 11.
 George Bryce, B.Sc., 62, Hospitland Drive, Lanark.
 Arnold Cooksey, B.Sc., F.I.C., 21, Weston Street, Wigan.
 William Leslie German, Ph.D., M.Sc., 184, Charlton Road, S.E. 7.
 George Leonard Godman, B.Sc., 7, Oakfield Road, Cannon Hill, Birmingham, 12.
 Joseph Melbourne Johnson, 72, Carless Avenue, Harborne, Birmingham.
 Jagraj Behari Lal, M.Sc., 473 Katra, Allahabad, U.P., India.
 Brian John Hector de Saram, B.Sc., A.R.C.S., Summerhill, Glebe Hyrst, Sanderstead, Surrey.
 John Lamb Stoves, B.Sc., 2, Station Road, Trimdon Station, Co. Durham.
 Charles Robert Sydney Tenniswood, M.Sc., A.I.C., 12, Patten Road, Wandsworth Common, S.W. 18.
 Douglas Elwood White, M.Sc., Queen's College, Oxford.
 Wilfrid John Wilson, B.Sc., 41, Upland Road, Selly Hill, Birmingham.
 Jack Woodcock, B.Sc., B.Sc.Tech., 24, Lower Lickhill Road, Stourport-on-Severn, Worcs.

Forms of Recommendation had been accepted by the Council under Bye-Law I (2) from the following :

Chang-Kong Chuang, Ph.D., National Research Institute of Chemistry, Academia Sinica, Brenan and Yu-Yuen Roads, Shanghai, China.
 Roland Leigh Glover, B.A.Sc., 365, Mark Street, Peterborough, Ontario, Canada.
 C. Frederick Koelsch, B.S., Ph.D., Department of Chemistry, University of Minnesota, Minneapolis, Minn., U.S.A.
 Frank Lovelock Winzor, B.Sc., The University, Adelaide, Australia.

Forms of Recommendation for Fellowship in favour of 14 Candidates were read for the second time.

The following papers were read :

- "Nuclei formation of crystals of copper sulphate pentahydrate." By N. F. H. BRIGHT and W. E. GARNER.
 "The thermal reaction between chlorine and gaseous formaldehyde. Part I." By R. SPENCE and W. WILD.
 "The decomposition of ozone photosensitised by chlorine." By R. G. W. NORRISH and G. H. J. NEVILLE.
 "Free radicals and atoms in primary photochemical processes. The photo-dissociation of aliphatic ketones and aldehydes." By T. G. PEARSON.

List of papers, or abstracts thereof, received between December 20th, 1934, and January 17th, 1935. (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.)

- "Optical rotatory dispersion in the carbohydrate group. Part V. Tetramethyl γ -gluconolactone." By R. W. HERBERT, E. L. HIRST, H. SAMUELS, and C. E. WOOD.
 "Mechanism of substitution at a saturated carbon atom. Part III. Kinetics of the degradations of sulphonium compounds." By J. L. GLEAVE, E. D. HUGHES, and C. K. INGOLD.
 "Mechanism of substitution at a saturated carbon atom. Part IV. A discussion of constitutional and solvent effects on the mechanism, kinetics, velocity, and orientation of substitution." By E. D. HUGHES and C. K. INGOLD.
 "Mechanism of substitution at a saturated carbon atom. Part V. Hydrolysis of *tert.*-butyl chloride." By E. D. HUGHES.
 "The meta-alkylation of aromatic hydrocarbons by the Friedel-Crafts reaction." By G. BADDELEY and J. KENNER.

- “The decomposition of acetyl peroxide.” By O. J. WALKER and G. L. E. WILD.
- “Polysaccharides. Part XIX. The molecular structure of waxy maize starch.” By W. N. HAWORTH, E. L. HIRST, and (Miss) M. D. WOOLGAR.
- “The dipole moments of associated liquids.” By F. R. GOSS.
- “The colouring matters of *Drosera Whittakeri*. Part I.” By A. K. MACBETH, J. R. PRICE, and F. L. WINZOR.
- “The crystal form of anhydrous citric acid.” By G. M. BENNETT and J. L. YUILL.
- “The parachors of ethyl orthoformate and triphenylmethane.” By D. LI. HAMMICK and H. F. WILMUT.
- “The veratrine alkaloids. Part I. The constitution of veratrine.” By B. K. BLOUNT.
- “The veratrine alkaloids. Part II. The selenium dehydrogenation of cevinc.” By B. K. BLOUNT.
- “Autoxidation processes. Part VIII. Steric hindrance in oxidation and racemisation of α -ketols.” By A. WEISSBERGER.
- “Autoxidation processes. Part IX. The electrolytic dissociation of α -ketols.” By A. WEISSBERGER and H. BACH.
- “ α - and β -Santalols.” By A. E. BRADFIELD, A. R. PENFOLD, and J. L. SIMONSEN.
- “Syntheses in the sesquiterpene series. Part II.” By A. E. BRADFIELD, E. R. JONES, and J. L. SIMONSEN.
- “Emulsions. Part II. Change of viscosity with amount of emulsifier.” By C. L. WILSON.
- “Kinetics of salt hydrate dissociations: $\text{MnC}_2\text{O}_4 \cdot 2\text{H}_2\text{O} = \text{MnC}_2\text{O}_4 + 2\text{H}_2\text{O}$.” By B. TOPLEY and M. L. SMITH.
- “The colouring matters of *Drosera Whittakeri*. Part II.” By A. K. MACBETH and F. L. WINZOR.
- “The reaction between hydrogen peroxide and cerous hydroxide.” By A. LAWSON and E. W. BALSON.
- “Synthetical experiments in the chromone group. Part XVI. Chalkones and flavones and their oxidation to flavones by means of selenium dioxide.” By H. S. MAHAL, H. S. RAI, and K. VENKATARAMAN.
- “Synthetical experiments in the chromone group. Part XVII. Further studies in the sodamide method of flavone synthesis.” By D. C. BHALLA, H. S. MAHAL, and K. VENKATARAMAN.
- “The ternary system stannous oxide-sulphur trioxide-water.” By H. G. DENHAM and W. E. KING.
- “A rearrangement of *ortho*-benzamidodisulphides.” By C. F. WIGHT and S. SMILES.
- “Chemical constitution and the dissociation constants of monocarboxylic acids. Part III.” By J. F. J. DIPPY, F. R. WILLIAMS, and (in part) R. H. LEWIS.
- “Chemical constitution and the dissociation constants of monocarboxylic acids. Part IV. A discussion of the electrolytic dissociation of substituted benzoic and phenyl-acetic acids in relation to other side-chain processes.” By J. F. J. DIPPY, H. B. WATSON, and F. R. WILLIAMS.
- “Reactivity of *peri*-substituted naphthalenes. Part III. Further synthetic reactions of 8-halogeno-1-naphthoic acids.” By H. G. RULE and H. M. TURNER.
- “Optical resolution of 8-carboxy-1-naphthylphenyl sulphoxide: The prediction of restricted rotation in *peri*-substituted naphthalenes.” By H. G. RULE and H. M. TURNER.
- “The system $\text{CaCO}_3\text{-CaSO}_4\text{-H}_2\text{O}$; and the effect of additions of sodium salts, 159° to 255° .” By L. M. CLARK and E. HUNTER.
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FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, FEBRUARY 21st, 1935.

ALLNUTT, JOHN JOSEPH ALBERT, 193, Brixton Road, S.W. 9. British. Chemist and Druggist. Member of Pharmaceutical Society. (*Signed by*) C. Morton, Charles Dorée, J. C. Crocker.

ASAO, YASUJI, Nagoya, Japan. Japanese. Teacher of Chemistry at the "Aichi" Pharmaceutical College. I was a student of the Tokyo Imperial University and am now a teacher of chemistry at the Aichi Pharmaceutical College. (*Signed by*) Yasuhiko Asahina, Junzo Shinoda, Shigehiko Sugawara.

BAMFORD, CLEMENT HENRY, Trinity College, Cambridge. British. Physical Chemistry Research. B.A., Cantab. (1st Class Hons.). As student: Parts I and II of Natural Sciences Tripos. Part I (1st Class)—Chemistry, Physics, Mathematics; Part II (1st Class) Chemistry. (*Signed by*) E. I. Akeroyd, John E. Carruthers, S. G. Foord.

BELL, SYDNEY HECTOR, 25, Mysore Road, Battersea, S.W. 11. English. Research Chemist. Ph.D., B.Sc., A.R.C.S., D.I.C., Royal College of Science. At present Research Chemist to the Research Assoc. of British Paint, Varnish, and Colour Manufacturers, Teddington. "The Heat of Wetting of Charcoals of Graded Activity in Relation to Adsorptive Capacity and Retentivity," S. H. Bell and J. C. Philip, *J.C.S.*, 1934, 1164—69. (*Signed by*) L. A. Jordan, G. H. Cheesman, D. R. Duncan.

BRUNNER, HENRY, 270, Kentish Town Road, N.W. 5. British. Research Student. Associate of the Royal College of Science, B.Sc. (Lond.). At present post-graduate research chemist at the Royal College of Science. Date of birth Aug. 31st, 1912. (*Signed by*) G. A. R. Kon, E. H. Farmer, R. P. Linstead.

BRYCE, GEORGE, 62, Hospitland Dr., Lanark, Scotland. Scottish. Research Student. B.Sc. (Glasgow). Glasgow Ramsay Memorial Fellow. Caven and Bryce, *J.C.S.*, 1934, 514. (*Signed by*) Eric K. Rideal, F. J. Wilson, H. W. Melville.

CHRISTIE, EDWIN WATSON, jun., Ashdene, Wormit, Fife. British. Research Student. B.Sc. (1st Class Hons. in Chemistry), St. Andrews. Carnegie Research Scholar. Alex McKenzie and Edwin W. Christie, "The Action of Optically Active Alcohols on Ketens," *J.C.S.*, 1934, 1070. Date of birth Nov. 28th, 1910. (*Signed by*) Alex. McKenzie, John D. M. Ross, Robert Roger, Isobel A. Smith.

COOKSEY, ARNOLD, 21, Weston Street, Wigan, Lancs. British. B.Sc., Special Chemistry (London). Lecturer on Chemistry, Wigan & District Mining and Technical College, 1927. Associateship of Institute of Chemistry, 1928; Fellowship of Institute of Chemistry, 1933. (*Signed by*) E. B. Naylor, Wilfred Harrison, H. J. C. Mathews.

COOME, DAVID ERNEST, 11, Victoria Road, Alexandra Park, N. 22. British. Research Student. B.Sc., 1st Class Hons., Chemistry, 1934 (London). (*Signed by*) J. R. Partington, J. W. Skeen, W. Maxwell.

CRAWFORD, JOHN WILLIAM CROOM, 21, Pinewood Road, Eaglescliffe, Co. Durham. British. B.Sc., Ph.D. (London). Research Chemist, Imperial Chemical Industries, Ltd. "Constitution of Carnitine," Crawford and Kenyon, *J.C.S.*, 1927, 396. (*Signed by*) M. P. Applebey, Walter Mitchell, J. Kenyon.

DUNLOP, HELEN GREIG, 26, Glasgow Road, Paisley, Scotland. Scottish. Research Student. B.Sc. with Hons. in Chemistry (1st Class). Demonstrator in Chemistry to first-year medical students. Paper "Synthesis of 1:1'-Dicarbazyl. A Note on the Stereoisomerism of Diphenyl Derivatives," in collaboration with Drs. S. H. Tucker and T. F. Macrae, in hands of printers. Date of birth Sept. 27th, 1911. (*Signed by*) T. S. Patterson, G. G. Henderson, S. Horwood Tucker.

ELLIS, LOUIS, 27, Northfield Terrace, Leeds, 7. British. Research Chemist. B.Sc. (1st Class Hons.). Ph.D. (Leeds). "Formation of Organo-Metalloidal Compounds by Micro-organism," Part I, *J.C.S.*, 1933, 95, by F. Challenger, C. Higginbottom, and L. Ellis. (*Signed by*) J. W. Baker, Frederick Challenger, Constance Higginbottom, A. Robertson.

FERRELL, EDNA, 52, Beaconsfield Street, Blyth, Northumberland. British. Research Student. B.Sc. (Durham). *J.C.S.*, 1934, 7, 1440. Date of birth Sept. 26th, 1911. (*Signed by*) Richard Raper, Joseph Macdonald, H. L. Riley, G. R. Clemo.

GERMAN, WILLIAM LESLIE, 184, Charlton Road, S.E. 7. British. Lecturer. B.Sc., Special (1st Class Hons. Chem.) London, M.Sc. (distinction); Ph.D. (London). Lecturer in

Chemistry, Woolwich Polytechnic. Lately research student under Dr. H. T. S. Britton (1928–31) at Exeter. Britton and German, *J.C.S.*, 1930, 1249, 2154; *ibid.*, 1931, 709, 1429; *ibid.*, 1934, 1156. (*Signed by*) A. I. Vogel, R. King, W. H. Lewis, H. T. S. Britton.

GILL, CYRIL ERNEST, 14, Haddington Road, Stoke, Devonport, Devon. English. Analytical Chemist. B.Sc. (Int.), London. Member of Society of Public Analysts; Fellow of Faculty of Sciences (Chemistry Section); Consulting Chemist to the Plymouth and District Dairymen's Association; Consulting Chemist to the Plymouth City Police (C.I.D.). In practice in Plymouth for nine years, during which time a large variety of work has been undertaken. (*Signed by*) Frank Royle, L. H. N. Cooper, F. J. Dymond.

GODMAN, GEORGE LEONARD, 7, Oakfield Road, Cannon Hill, Birmingham, 12. British. Research Student. B.Sc. (1st Class Hons. Chemistry), Birmingham. Date of birth Jan. 19th, 1914. (*Signed by*) W. N. Haworth, E. I. Hirst, Wm. Wardlaw.

GORDON, PETER STUART, 55, Darenth Road, Stamford Hill, N. 16. English. Research Student. B.Sc. (Hons.). Student at University College, London, from Oct. 1932. Date of birth May 29th, 1913. (*Signed by*) C. F. Goodeve, Henry Terrey, I. F. Gilbert.

GRATTON, GERALD, 6, Fitzroy Avenue, Ebbw Vale, Mon. British. B.Sc. (Hons.), Class I, Wales. Research Student at University College of North Wales, Bangor. Date of birth July 11th, 1912. (*Signed by*) J. L. Simonsen, A. E. Bradfield, F. G. Soper.

HILTON, FREDERICK, 16, Pall Mall, S.W. 1. British. B.Sc. (London), A.R.C.S. Student. Date of birth June 9th, 1913. (*Signed by*) E. H. Farmer, H. J. T. Ellingham, R. P. Linstead.

HOUSE, CECIL JOHN, Government Laboratory, Bangkok, Siam. British. Official Chemist. B.Sc. (London), A.R.C.S., F.I.C. Chemist, Government of Siam, 1926–. (*Signed by*) E. H. Rodd, W. J. Hickinbottom, Wm. Wardlaw, F. W. Pinkard.

HOWARD, ALFRED JOHN, 156, Chesterton Road, Cambridge. English. Undergraduate. Student Reading Natural Science and desirous of reading the Journals and attending meetings of the Society. (*Signed by*) B. C. Saunders, F. G. Mann, H. McCombie.

JOHNSON, JOSEPH MELBOURNE, 72, Carless Avenue, Harborne, Birmingham. British. Manufacturing Chemist. Chemist and Druggist (qualified 1906). Analytical and Manufacturing experience extending over twenty years. Managing Director of a firm manufacturing drugs and galenicals for the medical profession. (*Signed by*) C. Edward Sage, Stuart Blofeld, Eric F. Hersant.

JUKES, EDWARD HERBERT TREVOR, 2, The Croft, Barnet, Herts. English. Industrial Chemist. B.A. (Hons.), B.Sc. (Oxon.). Assistant Chemist, Messrs. Mann, Crossman, & Paulin, Ltd., Brewers, of London. "Derivatives of 1:2:3:4-Tetrahydroxybenzene" (Pt. III), W. Baker, E. H. T. Jukes, and C. A. Subrahmanyan, *J.C.S.*, Nov. 1934. Date of birth Sept. 3rd, 1911. (*Signed by*) R. Robinson, W. Baker, E. R. B. Woodward.

KEY, RICHARD FREDERICK, 49, Arcadian Gardens, Wood Green, N. 22. British. Research Student. B.Sc. (1st Class Hons.), London, A.I.C. (*Signed by*) J. R. Partington, D. C. Jones, W. R. Maxwell.

KLOCHKO-BENDEZKY, MICHAEL ANTON, Moscow (U.S.S.R.), Bolshaia Kaluzhskaja 73, Institute of General Chemistry of the Academy of Science of U.S.S.R. Russian. Research worker. Candidate of Science (in Russia). Published works (papers): (1) "Electrochemistry of Non-aqueous Solutions," *Zeitschrift für Phys. Chemie*, 1927, 127, 231; (2) "Equilibria in Molten Salts," *Journ. Gen. Chemistry*, 1933 (Russ.), No. 8, and seven other scientific papers. (*Signed by*) F. G. Donnan, Oswald J. Walker, Henry Terrey.

LAL, JAGRAJ BEHARI, 473, Katra, Allahabad, U.P., India. Aryan. Research Scholar in Allahabad University. B.Sc. (Hons.), Allahabad; M.Sc., Allahabad. Kanta Pershad Research Scholar, University of Allahabad; Papers submitted: (1) "Metallic Cerium in Organic Chemistry," *J.I.C.S.*, 1932, IX, 563–571. (2) "Constitution of the Colouring Matter of *Lawsonia Alba*," *J.I.C.S.*, 1933, 577–582. (3) "Chemical Examination of the Leaves of *Nyctanthes Abortivistic*, Linn.," *Bull. Acad. Sci. U.P.*, 1933, 83–86. Date of birth Dec. 29th, 1912. (*Signed by*) N. R. Dhar, K. P. Chatterjee, B. M. Gupta.

MEESOOK, BOONVIUM, St. John's College, Cambridge. Siamese. Student, reading for the Natural Science Tripos, Cambridge. Chemistry will be the subject to read in Part II. Date of birth June 12th, 1914. (*Signed by*) F. B. Kipping, W. G. Palmer, B. C. Saunders.

NEWELL, WILLIAM COPEMAN, 25, Pickford Lane, Bexleyheath, Kent. British. Student Demonstrator and Research Student. A.R.C.S., B.Sc. (Special, London). Student at Royal College of Science and late Assistant Chemist to The London Power Co. Date of birth April 30th, 1913. (*Signed by*) James C. Philip, H. V. A. Briscoe, H. J. T. Ellingham.

OWEN, LEONARD NEWTON, "Nentsbury," Selly Hill, Birmingham. British. Research Student, University of Birmingham. B.Sc. (Hons.), Birmingham. Date of birth June 20th, 1914. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

PACE, EDMUND STANLEY, Imperial College Union, South Kensington, S.W. 7. British. Research Student in Organic Chemistry. A.R.C.S., B.Sc. (Lond.) at the Royal College of Science. Date of birth April 13th, 1913. (*Signed by*) G. A. R. Kon, E. H. Farmer, R. P. Linstead.

PARKER, WILLIAM GEORGE SHARLAND, 74, The Drive, Loughton, Essex. English. Student at University College, London. Date of birth Sept. 8th, 1914. (*Signed by*) O. L. Brady, J. N. E. Day, C. L. Wilson.

PEACOCKE, THOMAS ARTHUR HARDY, Oratory School, Caversham Park, Nr. Reading. British Subject. Schoolmaster. B.A., B.Sc., Oxford. I have carried out a piece of research into the Photochemical Oxidation of *iso*Propyl Alcohol by Potassium Bichromate. (With E. J. Bowen and E. R. Wellburn), "The Photochemical Oxidation of Alcohols by Dichromate," *J.C.S.*, 1931, 1866. (*Signed by*) J. H. Wolfenden, Ronald P. Bell, E. J. Bowen.

QUIN, DENIS CHESELDEN, Boar's Hill House, Boar's Hill, nr. Oxford. British. Research Chemist. B.A., B.Sc. (Oxon.). Research into the Molecular Association of Aromatic Nitro-Compounds in Benzene Solution, 1933-1934. Not yet published. Now investigating anti-malarials. Date of birth Nov. 9th, 1911. (*Signed by*) Robert Robinson, D. Ll. Hammick, G. C. Hampson.

RACE, EDWARD, Allerburn House, Trimdon Station, Co. Durham. British. Research Student. B.Sc. (1st Class Hons. in Chemistry, Durham University). I wish to keep up with the progress of the Science in which I am a research student. (*Signed by*) Irvine Masson, W. A. Waters, C. W. Gibby, G. H. Christie.

RAPSON, WILLIAM HOWARD, 6, Edgewood Gardens, Toronto, Ontario, Canada. British. Research Chemist. B.A.Sc., Toronto. Demonstrator in Chemical Engineering, University of Toronto. Date of birth Sept. 15th, 1912. (*Signed by*) R. R. McLaughlin, J. G. Breckenridge, G. F. Marrian.

RITCHIE, ALEXANDER, 57, Cleghorn Street, Dundee, Angus. British. B.Sc. (St. Andrews), with 1st Class Hons. in Chemistry. Research Student. Date of birth Dec. 24th, 1911. (*Signed by*) Alex. McKenzie, John D. M. Ross, Robert Roger.

SARAM, BRIAN JOHN HECTOR DE, Summerhill, Glebe Hyrst, Sanderstead, Surrey. British. Schoolmaster. B.Sc., A.R.C.S., 2nd Class Hons. 1933. Imperial College, London. Teacher of elementary science, St. Michael's, Limpsfield. Date of birth March 3rd, 1913. (*Signed by*) M. A. Whiteley, R. H. Purcell, R. P. Linstead.

SARFIELD, NORMAN FRANCIS, Nentholme, 9, Wallace Terrace, Ryton-on-Tyne. British. Student. A.R.C.S., B.Sc. (Royal College of Science). Date of birth June 16th, 1913. (*Signed by*) G. A. R. Kon, E. H. Farmer, H. N. Rydon.

SEXTON, WILFRED ARCHIBALD, 63, Stanley Road, Broughton Park, Salford, 7. British. Research Chemist, Imperial Chemical Industries, Ltd. B.Sc., Ph.D. (Liverpool). Eight years research experience. *J.C.S.*, 1928, 47, 347, 2825; 1929, 921, 926, 2255. (*Signed by*) E. H. Rodd, S. Coffey, S. Ellingworth.

SHAPIRO, URIEL GEORGES, 86, The Avenue, Brondesbury, N.W. 6. Palestinian. Research for M.Sc. Licencié en Sciences Chimiques, Bruxelles. Graduated in Brussels with "Grande Distinction." Date of birth Oct. 14th, 1914. (*Signed by*) E. D. Hughes, C. K. Ingold, C. L. Wilson.

SNELL, JOHN FERGUSON, Macdonald College P.O., Quebec, Canada. Canadian. Professor of Chemistry, Macdonald College (of McGill University). B.A. Toronto 1894, Ph.D. Cornell 1898. For positions held, etc., see "American Men of Science." *Publications* (selected): "Elementary Household Chemistry" (Macmillan, 1914), *J. Amer. Chem. Soc.*, 23, 164; 24, 348; 25, 659, 809, 1138; 29, 1288. *J. Chem. Soc. Ind.*, 28, 49; 33, 507, 1177. *Trans. Roy. Soc. Can.*, 1913, III, 165; 1919, III, 221. *J. Ind. Eng. Chem.*, 5, 740, 993; 6, 216, 301; 8, 144, 241, 331, 421; 19, 278; *Anal. Edn.*, 1, 8, 12. *J. Ass. Off. Agr. Chemists*, 4, 157, 428; 13, 176; 14, 158; 15, 181; 16, 158; 17, 157. (*Signed by*) G. S. Whitby, R. H. Manske, Alfred Stansfield.

STEWART, ALEXANDER HOWARD, 75, Belgrave Road, S.W. 1. British. Manufacturing Chemist. Officier d'Academie des Beaux Arts. Officier de l'Instruction Publique (France). Worked with Carrel in application of and making Dakin's Solution. Worked with Kenneth Taylor in application of Quinine HCl in Cases of Gas Gangrene, etc. Wrote History of Liqueor de Labarraque up to time of Sol. Sodium Hypochlorite (Dakins). (Pamphlet published during

War.) Given French degrees for above work. (*Signed by*) Walter F. Loates, Harley F. Knight, Arthur J. Chapman.

STOVES, JOHN LAMB, 2, Station Road, Trimdon Station, Co. Durham. English. University Student—expect to do Research next Session. B.Sc. (Chemistry), Leeds. Student Dept. of Chemistry, University of Leeds, 1931–4. Date of birth May 22nd, 1912. (*Signed by*) Frederick Challenger, J. W. Baker, C. W. Shoppee, H. Burton, Constance Higginbottom.

SUNDERLAND, EDWARD, 2, Talbot Street, Legrams Lane, Bradford, Yorkshire. British. Student. Associate of the Royal College of Science. Date of birth Feb. 23rd, 1914. (*Signed by*) G. A. R. Kon, E. H. Farmer, S. H. Harper.

TAYLOR, WILLIAM, Tanglely Cottage, Pickhurst Rise, West Wickham, Kent. English. B.Sc. (Hons. Chem.), Manchester; M.Sc. (Chem.), London. Lecturer in Chemistry, The Polytechnic, Regent Street, W. 1. (*Signed by*) H. Lambourne, A. M. Ward, Henry J. S. Sand.

TENNISWOOD, CHARLES ROBERT SYDNEY, 12, Patten Road, Wandsworth Common, S.W. 18. British. Lecturer in Chemistry. B.Sc., M.Sc., A.I.C., University of Durham. 1. Publications in *J.C.S.* as below. 2. Teaching, lecturing and research experience in Armstrong College and Wandsworth Technical Institute. "The Lupin Alkaloids, Part III," Clemo, Raper, and Tenniswood, *J.C.S.*, 1931, 429. "Alkyl Derivatives of Ethyl Malonate and Ethyl Cyanoacetate," Clemo and Tenniswood, *J.C.S.*, 1931, 2549. (*Signed by*) G. R. Clemo, R. D. Haworth, H. L. Riley, Richard Raper, C. E. Mallen, J. G. Cockburn.

WASSERMANN, ALBERT, Regency House, Osnaburgh Street, N.W. 1. Austrian. Chemist. Dr.Phil. (Munich, Germany). Assistant Technical High School Zürich (Switzerland) and Kaiser-Wilhelm Institut, Heidelberg (Germany). Privatdozent Technical High School, Karlsruhe (Germany). (*Signed by*) H. de Laszlo, C. K. Ingold, C. L. Wilson.

WEBSTER, KENNETH CLIVE, 166, Ulverley Green Road, Olton, nr. Birmingham. British. Chemistry Research Student at Birmingham University. B.Sc. (1st Class Hons.), Birmingham. Date of birth July 29th, 1913. (*Signed by*) W. N. Haworth, Wm. Wardlaw, E. L. Hirst, E. G. Cox.

WHITE, DOUGLAS ELWOOD, Queen's College, Oxford, England. Australian. Student. M.Sc. (Sydney University). Papers published (with V. M. Trikojus, B.Sc., D.Phil.): "A Note on the Constitution of Tasmanol" (*Journ. Proc. Roy. Soc., N.S.W.*, 1932, 66, 279–283); "The Chemistry of the Constituents of the Wood-Oil of the Callitris Pines. Part I. The Constitution of Callitrol" (*ibid.*, 1932, 66, 284–299). (*Signed by*) D. Ll. Hammick, J. C. Smith, W. S. Rapson.

WILD, RICHARD, The Vineries, Sipson, West Drayton, Middlesex. British. Research Student. B.Sc. (Special Chemistry), London. Three-year course of chemical study and one year's research work at University College, London. (*Signed by*) C. K. Ingold, C. L. Wilson, C. G. Raison.

WILSON, WILFRID JOHN, 41, Upland Road, Selly Hill, Birmingham. British. Research Student. B.Sc. (Hons. Chem.), Birmingham. Date of birth Aug. 22nd, 1913. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

WOLF, LUDWIG, Andhra University, Waltair, India. German. University Professor. Dr.Phil. (Vienna), D.Eng. (Berlin). Late Professor of Chemistry of the University of Berlin, Professor of Chemistry and Technology of the University of Waltair. Many publications. (*Signed by*) F. G. Donnan, H. de Laszlo, C. F. Goodeve.

WOODCOCK, JACK, 24, Lower Lickhill Road, Stourport on Severn, Worcs. English. Fuel Technologist. B.Sc. (Hons. Chem.), Sheffield, B.Sc.Tech. (Hons. Fuel), Sheffield. Year's research on the constitution of coal under Prof. R. V. Wheeler. Desire to keep in touch with modern developments in chemistry, especially organic chemistry. (*Signed by*) G. M. Bennett, Arthur W. Chapman, J. C. Speakman, Brynmor Jones.

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

ANTAKI, Emile, c/o Ferrum, Ind. Arg. de Metales, S.A., Calle Espana, 402–600, Avellaneda. Buenos Aires (Argentina). British. Industrial Chemist. Junior Chemist, Buenos Aires Western Railway Co., Ltd., October 1928 to March 1930. Assistant Chemist, Ferrum, Ind. Arg. de Metales S.A., Buenos Aires (as from April 1st, 1930). Analytical and Research. (*Signed by*) A. Courtenay Luck, G. T. Morgan.

CHUANG, CHANG-KONG, National Research Institute of Chemistry, Academia Sinica, Brenan and Yu-Yuen Roads, Shanghai, China. Chinese. Director of National Research Institute of

Chemistry, Academia Sinica. Ph.D. in Chemistry, University of Chicago, U.S.A. Prof. of Chemistry for 7 years (1925-1931), North-eastern University, China; Dean of Science College, National Central University, Nanking, China (1933-1934). (Signed by) G. T. Morgan, Y. S. Chi.

GLOVER, ROLAND LEIGH, 365, Mark Street, Peterborough, Ontario, Canada. Canadian. B.A.Sc. (Toronto). Research Assistant, Department Chemical Engineering, University of Toronto. (Signed by) G. T. Morgan, R. R. McLaughlin, J. G. Breckenridge.

GREEN, CHARLES WALTER, 2, Bay Road, North Sydney, N.S.W., Australia. British Pharmaceutical Chemist. Registered Pharmacist, qualified by the University of Sydney Pharmacy Course and Pharmacy Board examinations. Member of the New South Wales Pharmaceutical Society. I have made my special interest the study of the "Chemical Adulteration of Foodstuffs" with regard to the use of chemical preservatives, chemical sprays, chemical fertilisers, chemicals used in food preparation and manufacturing processes, and certain poisons occurring naturally in foods such as fruits, vegetables, cereals, etc., which I have tentatively designated "Toxin X," and the physiological effects of these substances on the human system. An article setting forth the results of my experiments was published in the correspondence column of the *Australasian Journal of Pharmacy* of December 1932. I am desirous of becoming a Fellow of the Chemical Society to give me a better academic standing in the pursuance of this work, and to keep me in touch with current scientific advances. (Signed by) William Wood, G. T. Morgan.

KOELSCH, C. FREDERICK, Dept. of Chemistry, University of Minnesota, Minneapolis, Minn., U.S.A. American. Assist. Professor of Organic Chemistry. B.S., Ph.D., University of Wisconsin (U.S.A.). Papers in the *J. Amer. Chem. Soc.*, on Grignard Reagents, Indenes, and Rearrangements. References to papers in *J. Amer. Chem. Soc.*, 1929, 51, 3390; 1930, 52, 1105, 1164, 2430, 3364; 1931, 53, 304, 1147; 1932, 54, 2045, 2049, 2487, 3384, 4744; 1933, 55, 3394, 3885; 1934, 56, 480, 1337, 1605. (Signed by) Lee Irvin Smith, G. T. Morgan.

MENON, BALA KRISHNA, University College, Rangoon, Burma. Indian. Assistant Lecturer in Chemistry. M.Sc. (Hons.) of the Rangoon University. Associate of the Indian Institute of Science, Bangalore. Was Senior Demonstrator and at present Assistant Lecturer in Chemistry, University College. Done some research work and have published papers. *J.C.S.*, 1931, 1541, 2591; 1934, 1296. (Signed by) D. H. Peacock, I. J. Goldsworthy.

PRATT, LYDE STUART, 12, Marion Avenue, Glens Falls, New York, U.S.A. American. Chemist. Director of Research Imperial Color Works, Inc. A.B., Bowdoin College (1912), Ph.D., Johns Hopkins University (1915). Adjunct. Prof. of Chemistry, University of Virginia, 1915-1917; Research Chemist, R. I. du Pont de Nemours & Co., 1917-1927; Chemical Warfare Service, 1927-1928; Director of Research, Imperial Color Works, Inc., 1928 to date. (Signed by) Walter A. Patrick.

PUSHIN, NICOLAS ANTONOVITCH, Belgrad (Yugoslavia), Molerova ul. 54. Russian. Professor of the University, Belgrad. Magister of the Chemistry (Moscow), Doctor philos. (Ljubljana). 70 original papers in the *Zeitschr. f. phys. Chemie*, *Zeit. f. anorg. Chem.*, *Zeit. f. Elektrochemie*, *Monatshefte*, *Journ. of the Chem. Soc.*, *Glasnik*, etc. *J.C.S.*, 1922, 121, 2813, 2822; 1923, 123, 2717; 1924, 125, 2043, 2628; 1928, 2474. (Signed by) Dr. Stanko S. Miholic.

SOLIMAN, GABRA, Chemistry Dept., Faculty of Science, Egyptian University, Cairo, Egypt. Egyptian. Lecturer, Chemistry Dept., Faculty of Science. Diploma of Pharmacy. B.Sc., M.Sc. (Egypt). Interested in research, done some work on sterols and "The Influence of Groups on the Keto-enol Change and the Ease of Ring Formation," all pending publication. (Signed by) D. H. Bangham, A. Zaki.

TADROS, WADEI, 12, Sharia Nashati, Choubra, Cairo, Egypt. Egyptian. Demonstrator, Chemistry Department, Faculty of Science. B.Sc. (Egypt). Done research entitled "The Nature of the Reserve Polysaccharides of Some Seeds and the Mechanism of the Interconversion of Hexose Sugars in Living Organisms," and submitted for the M.Sc. Date of birth March 9th, 1910. (Signed by) D. H. Bangham, A. Zaki.

WINZOR, FRANK LOVELOCK, University of Adelaide, South Australia. British. Lecturer in Chemistry. B.Sc. (Hons.), Adelaide. Demonstrator, Chemistry Dept., University of Adelaide, 1928-32. Assistant Lecturer, Chemistry Dept., University of Adelaide, 1932 to date. "Glycogen. Part II," *J.C.S.*, 1932, 2026. "The Colouring Matters of *Drosera Whittakeri*. Parts I and II" (submitted for publication). (Signed by) A. Killen Macbeth, G. T. Morgan,

ADDITIONS TO THE LIBRARY.

I. *Donations.*

BASLE, SOCIETY OF CHEMICAL INDUSTRY. [Fifty years' history] 1884-1934. Basle 1934. pp. 85. ill. (*Recd.* 28/12/34.)

From the Board of Directors.

GERLACH, WALTHER, and GERLACH, WERNER. Clinical and pathological applications of spectrum analysis. Being the authorised translation of part II of "Die chemische Emissionsspektralanalyse." Translated by JOYCE HILGER TWYMAN. London 1934. pp. 143. ill. 14s. 6d. net. (*Recd.* 3/1/34.)

From the Publishers: Messrs. Adam Hilger.

NEWBURY, N. F. The teaching of chemistry. London 1934. pp. xii + 247. ill. 6s. net. (*Recd.* 15/11/34.)

From the Publishers: Messrs. William Heinemann.

II. *By Purchase.*

ARMSTRONG, E. F., and ARMSTRONG, K. F. The carbohydrates. 5th edition. (Monographs on Biochemistry.) London 1934. pp. viii + 252. 15s. net. (*Recd.* 31/12/34.)

BECHHOLD, H. [and others]. Einführung in die Lehre von den Kolloiden. Dresden 1934. pp. viii + 160. ill. M. 10. (*Recd.* 7/1/35.)

FALKENHAGEN, HANS. Electrolytes. Translated by R. P. BELL. Oxford 1934. pp. xvi + 347. ill. 25s. net. (*Recd.* 20/12/34.)

FILBY, FREDERICK A. A history of food adulteration and analysis. London 1934. pp. 269. ill. 10s. net. (*Recd.* 31/12/34.)

FINDLAY, ALEXANDER. The spirit of chemistry. 2nd edition. London 1934. pp. xvi + 510. ill. 10s. 6d. net. (*Recd.* 31/12/34.)

HAMILTON, ALICE. Industrial toxicology. New York 1934. pp. xxii + 329. \$3. (*Recd.* 3/1/35.)

HARTSHORNE, N. H., and STUART, A. Crystals and the polarising microscope. London 1934. pp. viii + 272. ill. 16s. net. (*Recd.* 20/12/34.)

HOLLINGS, H. [Editor.] The manufacture of gas. Vol. I. Water gas. By R. H. GRIFFITH. With a section on temperature measurement by H. C. EXELL. London 1934. pp. xvi + 260. ill. 36s. net. (*Recd.* 31/12/34.)

MEADE, ALWYNE. The new modern gas-works practice. 3rd edition. Vol. I. London 1934. pp. xiv + 492. ill. 50s. net. (*Recd.* 31/12/34.)

MEYER, CHARLES F. The diffraction of light, X-rays, and material particles. Chicago 1934. pp. xiv + 473. ill. \$5. (*Recd.* 20/12/34.)

NASH, ALFRED W., and HOWES, DONALD A. The principles of motor fuel preparation and application. Vol. I. London 1934. pp. xiv + 538. ill. 30s. net. (*Recd.* 20/12/34.)

SOMMERFELD, ARNOLD. Atomic structure and spectral lines. Translated from the 5th German edition by HENRY L. BROSE. 3rd edition. Vol. I. London 1934. pp. xii + 675. ill. 36s. net. (*Recd.* 31/12/34.)

III. *Pamphlets.*

AUSTRALIA, COMMONWEALTH OF. *Council for Scientific and Industrial Research*. Bulletin No. 83. Natural pastures: their response to superphosphate. By J. G. DAVIES, A. E. SCOTT, and K. M. FRASER. Melbourne 1934. pp. 76. ill.

— — Pamphlet No. 49. Some important poison plants of North Australia. Compiled by the Poison Plants Committee. Melbourne 1934. pp. 44. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. New indicators and other reagents employed in volumetric analysis. By ALEC DUNCAN MITCHELL. London 1934. pp. 21. ill.

PENFOLD, A. R., and MORRISON, F. R. Australian tea trees of economic value. Part I. (Revised edition.) (*Sydney Technological Museum Bulletin*, No. 14.) 1934. pp. 15. ill.

UNITED STATES. *Department of Agriculture*. Technical Bulletin No. 426. The relation of fertilizers to the control of cotton root rot in Texas. By H. V. JORDAN [and others]. Washington 1934. pp. 75. ill.

— — Technical Bulletin No. 430. The physical and chemical characteristics of the soils from the erosion experiment stations—second report. By H. E. MIDDLETON, C. S. SLATER, and H. G. BYERS. Washington 1934. pp. 62. ill.

FORTHCOMING MEETINGS OUTSIDE LONDON.

BIRMINGHAM.

Friday, March 1st, 1935, at 5 p.m. Joint meeting of the Chemical Society and the University of Birmingham Chemical Society in the Chemistry Lecture Theatre of the University at Edgbaston. Lecture entitled "Recent Progress in Sesquiterpene Chemistry," by Professor J. L. Simonsen, D.Sc., F.R.S.

BRISTOL.

Friday, February 15th, 1935, at 5.15 p.m., in the Chemistry Lecture Theatre of the University. Lecture on "The Properties and Chemistry of Heavy Hydrogen," by Dr. L. Farkas.

GLASGOW.

Friday, February 1st, 1935. Fellows are invited to attend a Lecture under the auspices of the Glasgow Section of the Society of Chemical Industry, to be delivered by Professor T. P. Hilditch, D.Sc., F.I.C., in the Royal Technical College, at 7.30 p.m., entitled "The Fats: New Lines in an Old Chapter of Organic Chemistry."

Friday, March 15th, 1935, at 7.30 p.m., in the Royal Technical College. Lecture entitled "From Governor Phillip to *d-neois*Menthol: the Story of a Research, 1788-1934," by Professor J. Read, M.A., Sc.D., Ph.D.

LIVERPOOL.

Wednesday, February 27th, 1935, at 7.30 p.m., in the Chemistry Lecture Theatre of the University. Lecture on "Solid Reactions and Explosive Decomposition," by Professor W. E. Garner, D.Sc.

MANCHESTER.

Thursday, February 14th, 1935, at 7 p.m. Joint meeting with the Manchester Section of the Institute of Chemistry. Lecture entitled "Chemistry in the Service of Medicine," by Dr. J. F. Wilkinson, F.I.C. (To be held at the Queen's Hotel.)

NEWCASTLE AND DURHAM.

Friday, February 8th, 1935, at 6.30 p.m., in the Chemistry Lecture Theatre, Armstrong College. Bedson Lecture, entitled "The Biochemistry of the Thyroid Gland," by Professor C. R. Harington, M.A., Ph.D., F.R.S.

ST. ANDREWS.

Friday, February 15th, 1935, at 4 p.m. Lecture on "Orientation of Substitutions in the Benzene Series," by Professor R. Robinson, D.Sc., F.R.S.

SHEFFIELD.

Friday, February 1st, 1935, at 5.30 p.m. Lecture on "Some Recent Developments in the Study of Chemical Reaction Mechanism," by Mr. C. N. Hinshelwood, M.A., F.R.S.

Friday, March 15th, 1935, at 5.30 p.m. Lecture on "The Simplest Free Radicals," by Professor F. Paneth, Ph.D.

These meetings will be held in the Chemistry Lecture Theatre of the University.

SOUTH WALES.

Thursday, March 21st, 1935, at 6 p.m., at University College, Swansea. Lecture on "Recent Work on Molecular Structure," by Dr. N. V. Sidgwick, O.B.E., M.A., F.R.S.

FORTHCOMING MEETINGS IN LONDON.

Thursday, February 7th, 1935, at 8 p.m.

Discussion on "Metallic Compounds," to be opened by Professor C. H. Desch, D.Sc., F.R.S. The following have agreed to contribute to the discussion:—Mr. J. D. Bernal, Dr. A. J. Bradley, Professor W. L. Bragg, Dr. W. Hume-Rothery, Dr. A. S. Russell, and Dr. C. Sykes.

Thursday, February 14th, 1935, at 5.30 p.m.

Fifth Liversidge Lecture, entitled, "The Process of Coagulation in Smoke," by Professor R. Whytlaw-Gray, O.B.E., Ph.D., F.R.S., to be held in the Meeting Hall of the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W. 1.

Thursday, February 21st, 1935, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, February 28th, 1935, at 8 p.m.

The Madame Curie Memorial Lecture to be delivered by Dr. A. S. Russell, M.C., M.A., at the Royal Institution, Albemarle Street, S.W. 1. (By the courtesy of the Managers.)

Thursday, March 7th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, March 21st, 1935, at 8 p.m.

Discussion on "Recent Progress in the Chemistry of the Terpenes," to be opened by Professor J. L. Simonsen, D.Sc., F.R.S.

Thursday, March 28th, 1935, at 4 p.m.

The 94th Annual General Meeting of the Society, when the President will deliver his Presidential Address. Tea will be served at 3.30 p.m.

At 7 for 7.30 p.m.

Anniversary Dinner at Grosvenor House, Park Lane, W. 1.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

A JOINT meeting of the Chemical Society and the University College of Swansea Chemical Society was held in the Department of Chemistry of the University College, Swansea, on Monday, January 21st, 1935, at 6 p.m., the President of the College Chemical Society in the Chair. Professor Dr. H. Freundlich delivered a lecture on "Thixotropy, or Isothermal Sol-Gel Transformation." A discussion followed in which Messrs. C. R. Bury, J. B. Davies, N. H. Hartshorne, E. Evans, and G. Ridd took part. A vote of thanks to the lecturer, proposed by Mr. C. A. Seyler and seconded by Mr. H. R. Forman, was carried with acclamation.

A meeting under the auspices of the Society was held on Thursday, January 24th, 1935, in the Chemistry Lecture Theatre of the University of Manchester, Dr. R. H. Pickard, F.R.S., in the Chair. The following papers were read and discussed :

- "Meta-alkylation of aromatic hydrocarbons by the Friedel-Crafts reaction." By G. BADDELEY and J. KENNER.
- "The preparation of diazomethane and its homologues." By D. W. ADAMSON and J. KENNER.
- "The action of aromatic aldehydes on benzene and toluene in the presence of aluminium chloride." By D. H. HEY.
- "Studies in the synthesis of vitamin-A. Part I." By W. H. DAVIES, I. M. HEILBRON, and W. E. JONES.
- "The constitution of apocinchene and the synthesis of its methyl and ethyl ethers." By F. S. STATHAM and J. KENNER.

A meeting under the auspices of the Society was held on Friday, January 25th, 1935, in the Chemistry Lecture Theatre of the University of Liverpool, when Dr. J. C. Smith delivered a Lecture entitled "Some researches on long-chain compounds." The Chair was taken by Professor A. Robertson, and a vote of thanks moved by Professor T. P. Hilditch and seconded by Professor H. J. Channon, was carried with acclamation. The lecture was much appreciated by a large audience.

A joint meeting of the Chemical Society and the University of Sheffield Chemical Society was held in the Chemistry Lecture Theatre of the University of Sheffield on Friday, February 1st, 1935, at 5.30 p.m. when Mr. C. N. Hinshelwood, delivered a Lecture entitled "Some recent developments in the study of chemical reaction mechanism." The Chair was taken by Professor G. M. Bennett, and an audience of about 80 was present.

Ordinary Scientific Meeting, Thursday, February 7th, 1935, at 8 p.m., Professor G. T. MORGAN, O.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 the 17th January, of Professor Emanuele Paternò, who was elected an Honorary Fellow on the 18th March, 1920, and of the following Fellows :

	Elected.	Died.
James Munsie Bell	May 7th, 1925.	March 3rd, 1934.
Arthur William Numi	Feb. 7th, 1901.	Jan. 25th, 1935.
Allan Winter Rowe	Feb. 17th, 1921.	Dec. 6th, 1934.

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

Adrien Albert, B.Sc., c/o Y.M.C.A. Central, Great Russell Street, W.C. 1.
 Herbert Hans Karl August Appel, Dr.phil., Dyson Perrins Laboratory, South Parks Road, Oxford.
 John George Mackay Bremner, B.A., B.Sc., Jesus College, Oxford.
 Charles William Arnold Brown, M.Sc., 48, Oakhill Road, Putney, S.W. 15.
 Reginald Langham Elliott, B.Sc., 23, Paddock Street, Wigston, Leicester.
 John Field, B.A., 30, Hills Road, Cambridge.
 Robert Salmon Hutton, M.A., D.Sc., 1, Chaucer Road, Cambridge.
 Alan James Martin Jenner, B.A., 27, Argyle Street, Oxford.
 Shri Krishna, D.Sc., Ph.D., c/o Forest Research Institute and College, Dehra Dun, U.P., India.
 Susumu Nukada, Teikoku Medical and Pharmaceutical College for Women, Ohmori, Tokyo, Japan.
 Peter William Reynolds, B.A., "Aurora," Cumnor Hill, Oxford.
 Leonard Hart Smith, M.Sc., 232, Woodstock Road, Oxford.
 Edward Jervis Vickers, B.A., Jesus College, Oxford.

A Discussion on "Intermetallic Compounds" was opened by Professor C. H. Desch, and continued by Professor W. L. Bragg, Mr. J. D. Bernal, Dr. A. J. Bradley, Dr. C. Sykes, Dr. A. S. Russell, Professor J. C. Philip, Professor T. Turner, and Dr. N. V. Sidgwick. A contribution received from Dr. W. Hume-Rothery was read by the Senior Secretary.

The Twenty-ninth Bedson Lecture was delivered by Professor C. R. Harington on Friday, February 8th, 1935, in Armstrong College, Newcastle, on the subject of "The Biochemistry of the Thyroid Gland," to which Fellows of the Society were invited.

Professor Harington dealt with the history of the anatomical and pathological aspects of the gland, and with the work which led up to the isolation and synthesis of Thyroxine.

Lastly, the problem presented by the observation that the physiological activity of the gland is proportional, not to its Thyroxine, but to its total iodine content, was discussed. The only other iodine-containing substance in the gland is 3 : 5-diiodotyrosine, and the conclusion drawn was that thyroxine as isolated is an artefact, the actual active secretion containing a polypeptide consisting of not only these, but also other amino-acids.

Extra Meeting, held at the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W. 1, on Thursday, February 14th, 1935, at 5.30 p.m.

The President, Professor G. T. MORGAN, O.B.E., D.Sc., LL.D., F.R.S., was in the Chair.

In opening the Proceedings, the PRESIDENT referred to the service rendered to chemistry by Professor Archibald Liversidge and to the institution of the Liversidge Lectureship. He then called upon Professor R. Whytlaw-Gray to deliver the Fifth Liversidge Lecture entitled "The Process of Coagulation in Smoke."

At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by Sir ROBERT ROBERTSON, and seconded by Professor J. C. PHILIP, was carried with acclamation, Professor R. WHYTLAW-GRAY making brief acknowledgment.

Ordinary Scientific Meeting, Thursday, February 21st, 1935, at 8 p.m., Professor G. T. MORGAN, O.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 February 15th, of Professor Bohuslav Brauner, who was elected an Honorary Fellow on March 1st, 1923, and stated that the Council had passed the following resolution with regard to the deaths of Professor Bohuslav Brauner and Professor Emanuele Paternò :

"The President, Officers and Council of the Chemical Society have learnt with profound regret of the deaths of their distinguished colleagues, Professor Bohuslav Brauner

and Professor Emanuele Paternò, Honorary Fellows of the Society, and desire to record their high appreciation of the eminent services rendered by these Honorary Fellows to the Science of Chemistry. They offer to the relatives of the late Professor Brauner and Professor Paternò their sincere sympathy in the irreparable loss they have sustained."

The PRESIDENT also referred to the loss sustained by the Society, through death, on February 13th, of Dr. A. Jamieson Walker, who was elected a Fellow of the Society on February 17th, 1898.

The PRESIDENT announced that the Council had decided that :

1. The Annual General Meeting will be held on March 28th at 3.30 p.m. (instead of 4 p.m. as already announced) for the convenience of Fellows attending the Anniversary Dinner.

2. In future when the Anniversary Dinner takes place at the end of the term of office of the President, the retiring President shall hand over his office to the newly elected President at the Dinner. Accordingly, at the Anniversary Dinner on March 28th, Professor G. T. Morgan will preside and hand over his office to Dr. N. V. Sidgwick during the evening.

Messrs. G. C. Hampson and H. M. Powell were formally admitted Fellows of the Chemical Society.

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

Ronald Arthur Powell Guest, B.A., 15, St. Margaret's Road, Oxford.

Claude Hurst, M.A., D.Phil., Jesus College, Oxford.

Eric Ian Johnson, M.Sc., 5, Bedford Road, Wanstead, E. 18.

May Mawson, M.Sc., A.R.C.S., 15, Lansdown Road, Gloucester.

Alexander George Ogston, B.A., B.Sc., Balliol College, Oxford.

Stephen Esslemont Woods, B.A., B.Sc., Jesus College, Oxford.

The following forms of recommendation for Fellowship have been accepted by the Council under Bye-Law I (2) :

Wallace H. Carothers, D.Sc., Du Pont Experimental Station, Wilmington, Delaware, U.S.A.

Edgar Augustus Harlow, South Travancore Medical Mission, Neyyoor, Travancore, India.

Chi-Ming Ma, B.Sc., National Research Institute of Chemistry, Academia Sinica, Shanghai, China.

Leopold Mandelstam, M.Sc., Consolidated Oil Products, Ltd., Johannesburg, S. Africa.

Luigi Schiatti, Film Cappelli and Ferrania, Ferrania, Savona, Italy.

Wladimir W. Tschelinzoff, Prof. Dr., Laboratory of Organic Chemistry, The University, Saratow, U.S.S.R.

Alvin Sawyer Wheeler, Prof., A.M., Ph.D., Chapel Hill, North Carolina, U.S.A.

Francisco Yoldi, Prof. Dr., Catedratico de la Universidad, Sevilla, Spain.

Forms of Recommendation for Fellowship in favour of 13 Candidates were read for the second time.

Professor J. W. Cook and Dr. M. Nierenstein were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected :

John Joseph Albert Allnutt.

Emile Antaki.

Yasuji Asao.

Clement Henry Bamford, B.A.

Sydney Hector Bell, B.Sc., Ph.D., A.R.C.S.,
D.I.C.

Henry Brunner, B.Sc., A.R.C.S.

George Bryce, B.Sc.

Edwin Watson Christie, Jun., B.Sc.

Chang-Kong Chuang, Ph.D.

Arnold Cooksey, B.Sc., F.I.C.

David Ernest Coome, B.Sc.

John William Croom Crawford, B.Sc., Ph.D.

Helen Greig Dunlop, B.Sc.

Louis Ellis, B.Sc., Ph.D.

Idna Ferrell, B.Sc.

William Leslie German, M.Sc., Ph.D.

Cyril Ernest Gill, B.Sc.

Roland Leigh Glover, B.A.Sc.

George Leonard Godman, B.Sc.

Peter Stuart Gordon, B.Sc.

Gerald Gratton, B.Sc.

Charles Walter Green.

Frederick Hilton, B.Sc., A.R.C.S.

Cecil John House, B.Sc., A.R.C.S., F.I.C.

Alfred John Howard.

Joseph Melbourne Johnson.

Edward Herbert Trevor Jukes, B.A., B.Sc.

Richard Frederick Key, B.Sc., A.I.C.

Michael Anton Klochko-Bendzky.

C. Frederick Koelsch, B.S., Ph.D.	Uriel Georges Shapiro.
Jagraj Behari Lal, M.Sc.	John Ferguson Snell, B.A., Ph.D.
Boonyium Meesook.	Gabra Soliman, M.Sc.
Bala Krishna Menon, M.Sc.	Alexander Howard Stewart.
William Copeman Newell, B.Sc., A.R.C.S.	John Lamb Stoves, B.Sc.
Leonard Newton Owen, B.Sc.	Edward Sunderland, A.R.C.S.
Edmund Stanley Paice, B.Sc., A.R.C.S.	Wadei Tadros, B.Sc.
William George Sharland Parker.	William Taylor, M.Sc.
Thomas Arthur Hardy Peacocke, B.A., B.Sc.	Charles Robert Sydney Tenniswood, M.Sc., A.I.C.
Lyde Stuart Pratt, A.B., Ph.D.	Albert Wassermann, Dr.Phil.
Nicolas Antonovitch Pushin, Dr.Phil.	Kenneth Clive Webster, B.Sc.
Denis Cheselden Quin, B.A., B.Sc.	Douglas Elwood White, M.Sc.
Edward Race, B.Sc.	Richard Wild, B.Sc.
William Howard Rapson, B.A.Sc.	Wilfrid John Wilson, B.Sc.
Alexander Ritchie, B.Sc.	Frank Lovelock Winzor, B.Sc.
Brian John Hector de Saram, B.Sc., A.R.C.S.	Ludwig Wolf, Dr.Phil., D.Eng.
Norman Francis Sarsfield, B.Sc., A.R.C.S.	Jack Woodcock, B.Sc., B.Sc.Tech.
Wilfred Archibald Sexton, B.Sc., Ph.D.	

The following papers were read :

- “ The organic compounds of gold. Part IV. *n*-Propyl compounds.” By A. BURAWOY and C. S. GIBSON.
- “ Autoxidation processes. Part VIII. Steric hindrance in oxidation and racemisation of α -ketols.” By A. WEISSBERGER.
- “ The identification of some aromatic nitro-compounds by optical crystallographic methods.” By E. S. DAVIES and N. H. HARTSHORNE.
- “ A rearrangement of *o*-aminodiphenyl ethers. Part II.” By K. C. ROBERTS, C. G. M. DE WORMS, and (MISS) H. B. CLARK.

ANNUAL GENERAL MEETING AND ANNIVERSARY DINNER.

The Council has decided that the Annual General Meeting shall be held on Thursday, March 28th, at 3:30 p.m., and not at 4 p.m. as previously announced.

The Anniversary Dinner will be held at Grosvenor House, Park Lane, W. 1, the same evening at 7 for 7.30 p.m. The Most Honourable The Marquess of Reading, P.C., G.C.B., G.C.S.I., G.C.I.E., G.C.V.O., will be the principal guest of the evening. Application for tickets, price 12s. 6d. each, should be sent as soon as possible to the Assistant Secretary, The Chemical Society, Burlington House, London, W. 1.

CONFERENCE ON INDUSTRIAL PHYSICS.

A Conference on Industrial Physics, under the auspices of the Institute of Physics, will be held at The University of Manchester and at the College of Technology, Manchester, from Thursday, March 28th, to Saturday, March 30th, 1935.

The subject to be considered at the Conference is “ Vacuum Devices in Research and Industry.”

An exhibition of instruments, apparatus, and books cognate to the subject of the Conference is being arranged, and will be held in the laboratories of the University of Manchester.

Fellows of the Society are cordially invited to attend the Conference, and there will be no Conference fee. Application should be made before March 7th.

Further particulars of the Conference and of the lectures and discussions to be held together with forms of entry, can be obtained from

The Secretary,
Institute of Physics,
1, Lowther Gardens,
Exhibition Road,
London, S.W. 7.

List of papers, or Abstracts thereof, received between January 17th and February 21st, 1935. (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 conductivity of methoxides and ethoxides.” By W. F. K. WYNNE-JONES.
- “A hydrate decomposition mechanism.” By V. R. DAMERELL and O. F. TOWER.
- “Studies on the Michael reaction. Part I. The condensation of ethyl benzylmalonate with ethyl fumarate.” By H. N. RYDON.
- “The stereochemical relationships of some optically active amines and amino-acids. Part I. The configuration of valine.” By F. BARROW and G. W. FERGUSON.
- “An easy method for the preparation of *l*-xylose.” By H. H. K. A. APPEL.
- “The preparation of liquid monomeric formaldehyde.” By R. SPENCE and W. WILD.
- “The transformation of *d*-catechin into cyanidin chloride.” By H. APPEL and R. ROBINSON.
- “Primary photochemical processes. Part VI. The photochemical decomposition of certain cyclic ketones.” By (MISS) O. D. SALTMARSH and R. G. W. NORRISH.
- “The synthesis of compounds related to the sterols, bile acids, and œstrus-producing hormones. Part V. The synthesis of conjugated arylhexadienes, and their behaviour in the Diels–Alder reaction.” By A. COHEN.
- “Solubilities of the double magnesium nitrates of the cerium group.” By J. A. N. FRIEND and (in part) W. N. WHEAT.
- “The interpretation of the dissociation pressures of the palladium–hydrogen system.” By M. H. HEY.
- “The kinetics of the reaction between carbonyl sulphide and water.” By H. W. THOMPSON, C. F. KEARTON, and S. A. LAMB.
- “Fused carbon rings. Part IV. Further investigation of 0:3:3-*bicyclooctanones* in relation to the strain theory.” By J. W. BARRETT and R. P. LINSTAD.
- “The kinetics of the reaction between hydrogen and sulphur. Part II. (a) Formation and characteristics of the unimolecular layer of hydrogen sulphide on the glass surface. (b) Independence of the reaction on the presence of oxygen, moisture, and sulphur dioxide.” By F. E. AYNSLEY and P. L. ROBINSON.
- “Syntheses of polycyclic compounds related to the sterols. Part III. 9-Methyl- and 3':9-dimethyl-*cyclopentenophenanthrenes*.” By D. J. C. GAMBLE and G. A. R. KON.
- “2:4:6-Trimethylphenyldimethylphosphine.” By W. C. DAVIES.
- “The colouring matters of *Drosera Whittakeri*. Part III. The synthesis of hydroxy-droserone.” By F. L. WINZOR.
- “Intermetallic compounds of cadmium and copper.” By A. S. RUSSELL.
- “Chromatehexamminecobaltic salts and a hypothesis of *pseudo*-complex formation.” By S. H. C. BRIGGS.
- “The synthesis of polyterpenoid compounds. Part I. Preliminary experiments.” By J. W. COOK and A. DANSI.
- “The synthesis of compounds related to the sterols, bile acids, and œstrus-producing hormones. Part VI. Experimental evidence of the complete structure of œstrin, equilin, and equilenin.” By A. COHEN, J. W. COOK, and C. L. HEWETT.
- “Hydrocarbons from *neorgosterol*.” By G. A. D. HASLEWOOD and (MISS) E. ROE.
- “Some thiopyrimidazine derivatives.” By R. ROBINSON and (MISS) M. L. TOMLINSON.
- “Note on the electrolytic reduction of $\alpha\alpha'$ -dicyano- $\beta\beta$ -dimethylglutarimide.” By G. GRATTON and G. R. RAMAGE.
- “Relative reactivities of some alkyl iodides with sodium *isoeugenyl*oxide in ethyl-alcoholic solution. Part I.” By C. W. A. BROWN.
- “Experiments on the synthesis of bergapten and its derivatives. Part I. Furocoumarins.” By J. N. RAY, S. S. SILOOJA, and V. R. VAID.
- “Conversion of 3-nitro-4-methylphenylarsonic acid into 3-amino-4-carboxyphenylarsonic acid by intramolecular dismutation, and the action of hydrobromic acid on *m*-arsanilic acid and 3-amino-4-carboxyphenylarsonic acid.” By A. H. C. P. GILLIESON, W. O. KERMAK, and W. T. SPRAGG.

- "The dipole moments of *p*-cymene; 2- and 3-halogeno-*p*-cymenes, carvacrol, and thymol; *p*-ethyltoluene; *p*-*tert*-butyltoluene, 1:3-dimethyl-5-*tert*-butylbenzene, *tert*-butylbenzene and its *p*-nitro-derivative. By (MRS.) C. G. LE FÈVRE, R. J. W. LE FÈVRE, and (in part) (Miss) K. W. ROBERTSON.
- "The mechanism of additions to double bonds. Part I. Thermochemistry and kinetics of a diene synthesis." By A. WASSERMANN.
- " α -Ketol carboxylic acids. Part I. The preparation and properties of 9-hydroxy-10-ketostearic acid." By G. KING.
- "Thionaphthopyrazoles." By W. J. BARRY and E. W. McCLELLAND.
- "The structure of caesium cobalt chloride (Cs₃CoCl₅)." By H. M. POWELL and A. F. WELLS.
- "4(5)- β -Alkylaminoethylglyoxalines." By B. GARFORTH and F. L. PYMAN.
- "Some derivatives of 1:8-*N*-methylnaphthalimide." By E. M. FRANCIS and J. L. SIMONSEN.
- "Relative reactivities of some alkyl iodides with sodium *isoeugen*oxide in ethyl-alcoholic solution. Part II." By C. W. A. BROWN.
- "The atomic weight of terbium." By J. K. MARSH.
- "The tetrazotisation of aryl diamines with special reference to *ortho*-phenylenediamine." By H. H. HODGSON and J. WALKER.
- "Studies on hydrogen cyanide. Part V. Some reactions of iminoformylcarbylamine." By L. E. HINKEL, E. E. AYLING, and J. H. BEYNON.
- "Substituted aromatic aldehydes in Hantzsch's pyridine condensation. Part IV. Derivatives of 3:4-dihydroxybenzaldehyde." By L. E. HINKEL, E. E. AYLING, and W. H. MORGAN.
- "The vapour-pressure curve of formaldehyde and some related data." By R. SPENCE and W. WILD.
- "The energetics of catalysis. Part IV. Influence of deactivation by heat treatment on the value of the activation energy." By E. B. MAXTED and C. L. MOON.
- "Studies in electro-endosmosis. Part VI. The 'bubble-tube' method of measurement." By F. FAIRBROTHER and A. E. STUBBS.
- "The planar configuration for quadricovalent nickel, palladium, and platinum." By E. G. COX, F. W. PINKARD, W. WARDLAW, and K. C. WEBSTER.

ADDITIONS TO THE LIBRARY.

I. Donations.

AVKROYD, W. R. Three philosophers (Lavoisier, Priestley and Cavendish). London 1935. pp. xii + 277. ill. 10s. 6d. net. (Recd. 17/1/35.) From the Publishers: Messrs. William Heinemann (Medical Books).

CHILDS, W. H. J. Physical constants: selected for students. London 1934. pp. viii + 77. 2s. 6d. net. (Recd. 14/1/35.) From the Publishers: Messrs. Methuen & Co.

FARADAY SOCIETY. Colloidal electrolytes: a general discussion. London 1935. pp. iv + 422. ill. 18s. 6d. net. (Recd. 7/2/35.) From the Society.

GOLDSMITH, J. N. Alexander Parkes, Parkesine, xylonite and celluloid. London 1934. pp. vi + 55. ill. (Reference.) [In mimeograph form.] From the Author.

HARVEY, ARTHUR. Laundry chemistry: a manual on the chemistry of laundry materials and methods. 2nd edition. London 1935. pp. viii + 118. 4s. net. (Recd. 14/1/35.) From the Publishers: The Technical Press.

HOPKIN & WILLIAMS, LTD. Organic reagents for metals. 2nd edition. London 1934. pp. 107. (Reference.) 1s. 3d. net. From the Publishers: Messrs. Hopkin & Williams.

TABLES ANNUELLES DE CONSTANTES ET DONNÉES NUMÉRIQUES. Vol. X. Year 1930. Part 1. Paris 1934. pp. xlii + 633. (Reference.) From the Comité International.

TOMBROCK, W. Chemische Stoffklärung. Eine einfache Erklärung physikalischer und chemischer Naturerscheinungen nach chemischer Denkweise. Translated by J. GROSSFELD. Leipzig 1934. pp. 30. M. 1. (Recd. 12/2/35.) From the Publisher: Herr Otto Hillmann.

II. By purchase.

BARRY, T. HEDLEY, and DUNSTER, GEORGE WILLIAM. Varnish making. London [1934]. pp. xii + 132. ill. 10s. net. (Recd. 22/1/35.)

BERL, ERNST. [Editor.] Chemische Ingenieur-Technik. Vol. I. Berlin 1935. pp. xxiv + 874. ill. M. 120. (Recd. 5/2/35.)

BERZELIUS, JÖNS JACOB. Autobiographical notes. Published by the Royal Swedish Academy of Sciences through H. G. SÖDERBAUM. Translated by OLOF LARSELL. Baltimore 1934. pp. xii + 194. ill. \$2.50. (*Recd.* 22/1/35.)

BILLITER, JEAN. Prinzipien der Galvanotechnik. Wien 1934. pp. iv + 326. ill. M. 25.50. (*Recd.* 14/1/35.)

BROOMIE, DONALD C. The testing of bituminous mixtures: a laboratory handbook concerning road and building materials. With a chapter on roofing felts by R. O. CHILD. London 1934. pp. viii + 194. ill. 15s. net. (*Recd.* 22/1/35.)

ERGEBNISSE DER ENZYMFORSCHUNG. Edited by F. F. NORD and R. WEIDENHAGEN. Vol. I, etc. Leipzig 1932+. (*Reference.*)

FEIGL, FRITZ. Qualitative Analyse mit Hilfe von Tüpfelreaktionen. 2nd edition. Leipzig 1935. pp. xii + 513. M. 29. (*Recd.* 14/1/35.)

HAND- UND JAHRBUCH DER CHEMISCHEN PHYSIK. Vol. VI. Part 1a. Elektronenstrahlen und ihre Wechselwirkung mit Materie. By J. HENGSTENBERG and KARL WOLF. Leipzig 1935. pp. 236 + xii. M. 24. (*Recd.* 14/1/35.)

— Vol. VI. Part 1b. Dielektrische Polarisation. By O. FUCHS and K. L. WOLF. Leipzig 1935. pp. x, 237 to 472, 36. M. 27. (*Recd.* 30/1/35.)

HÉDERER, CHARLES, and ISTIN, MARC. L'arme chimique et ses blessures. Étude générale sur les gaz de guerre. Paris 1935. pp. 697. ill. 125 fr. (*Recd.* 25/1/35.)

HOPKINS, ARTHUR JOHN. Alchemy, child of Greek philosophy. New York 1934. pp. xii + 262. ill. \$3.50. (*Recd.* 7/2/35.)

HUNZIKER, OTTO FREDERICK. Condensed milk and milk powder. 5th edition. La Grange, Ill. 1935. pp. xviii + 661. ill. 31s. 6d. net. (*Recd.* 22/1/35.)

KENT-JONES, D. W. The practice and science of breakmaking. Liverpool 1934. pp. viii + 184. ill. 7s. 6d. net. (*Recd.* 22/1/35.)

SCHMIDT, JÜRGEN. Das Kohlenoxyd. Seine Bedeutung und Verwendung in der technischen Chemie. Leipzig 1935. pp. viii + 235. ill. M. 16.50. (*Recd.* 4/2/35.)

SCHWARZ, HEINRICH. Die Mikrogasanalyse und ihre Anwendung. Wien 1935. pp. xii + 286. ill. M. 21. (*Recd.* 30/1/35.)

TOLLENS, B. C. G. Kurzes Handbuch der Kohlenhydrate. 4th edition. By HORST

ELSNER. Leipzig 1935. pp. xxii + 627. M. 41. (*Recd.* 11/2/35.)

III. Pamphlets.

CEYLON. *Coconut Research Scheme*. Bulletin No. 1. Report on the soap industry in Ceylon. By R. CHILD. [Lunuwila] 1934. pp. vi + 45.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Report of test . . . on the plant of the British Coal Distillation Company, Ltd., at Newbold, Leicestershire. Test carried out March 1933. London 1935. pp. iv + 29. ill.

— *Lubrication Research*. Technical Paper No. 2. A study of the boundary lubricating value of mineral oils of different origin. By M. E. NOTTAGE. London 1934. pp. iv + 32. ill.

FEDERATED MALAY STATES. *Institute for Medical Research*. Bulletin No. 1 of 1934. Studies in vitamin B₁ (the antineuritic vitamin). Part II. The "oryzatoxin" theory. By I. A. SIMPSON. Kuala Lumpur 1934. pp. iv + 24. ill.

— — Bulletin No. 2 of 1934. Lectures on the development and use of the synthetic anti-malarial drugs. By RICHARD GREEN. Kuala Lumpur 1934. pp. iv + 50.

INDIA. *Society of Biological Chemists*. Industrial possibilities of some research work done in India. By GILBERT J. FOWLER. [Bangalore] 1934. pp. iv + 42.

MINES DEPARTMENT. *Safety in Mines Research Board*. Paper No. 89. The ignition of firedamp by broken electric lamp bulbs. The appearance of the filaments. By G. ALLSOP and R. V. WHEELER. London 1935. pp. 15. ill.

— — Paper No. 90. The ignition of firedamp by coal-mining explosives. Part II. Sheathed explosives. By C. A. NAYLOR, W. PAYMAN, and R. V. WHEELER. London 1935. pp. 33. ill.

NIERENSTEIN, MAXIMILIAN. A missing chapter in the history of organic chemistry: the link between elementary analysis by dry-distillation and combustion. (From *Isis*, 1934, 21.)

NIERENSTEIN, MAXIMILIAN, and PRICE, FRANCES M. The identity of the manuscript entitled "Mr. Nortons worke, *de lapide ph'orum*" with the Ordinall of alchimy. (From *Isis*, 1934, 21.)

FORTHCOMING MEETINGS OUTSIDE LONDON.

BIRMINGHAM.

Friday, March 1st, 1935, at 5 p.m. Joint meeting of the Chemical Society and the University of Birmingham Chemical Society in the Chemistry Lecture Theatre of the University at Edgbaston. Lecture entitled "Recent Progress in Sesquiterpene Chemistry," by Professor J. L. Simonsen, D.Sc., F.R.S.

GLASGOW.

Friday, March 15th, 1935, at 7.30 p.m., in the Royal Technical College. Lecture entitled "From Governor Phillip to *d-neoisomenthol*: the Story of a Research, 1788-1934," by Professor J. Read, M.A., Sc.D., Ph.D.

LEEDS.

Thursday, April 25th, 1935, at 7 p.m., in the Chemistry Lecture Theatre of the University. A meeting for the reading of papers.

SHEFFIELD.

Friday, March 15th, 1935, at 5.30 p.m., in the Chemistry Lecture Theatre of the University. Lecture on "The Simplest Free Radicals," by Professor F. Paneth, Ph.D.

SOUTH WALES.

Thursday, March 21st, 1935, at 6 p.m., at the University College, Swansea. Lecture on "Recent Work on Molecular Structure," by Dr. N. V. Sidgwick, O.B.E., M.A., F.R.S.

FORTHCOMING MEETINGS IN LONDON.

Thursday, March 7th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, March 21st, 1935, at 8 p.m.

Discussion on "Recent Progress in the Chemistry of the Terpenes," to be opened by Professor J. L. Simonsen, D.Sc., F.R.S.

Thursday, March 28th, 1935, at 3.30 p.m.

The 94th Annual General Meeting of the Society, when the President will deliver his Presidential Address. Tea will be served at 3 p.m.

At 7 for 7.30 p.m.

Anniversary Dinner at Grosvenor House, Park Lane, W. 1.

Thursday, April 4th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

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 .

A meeting under the auspices of the Society was held on Wednesday, February 27th, 1935, in the Chemistry Lecture Theatre of the University of Liverpool, when Professor W. E. Garner delivered a Lecture entitled: "Solid Reactions and Explosive Decomposition," before an appreciative audience. The Chair was taken by Professor W. C. McC. LEWIS, and a cordial vote of thanks to the Lecturer was proposed by Dr. R. O. Griffith and seconded by Dr. H. D. H. Drane.

The lecture was preceded by a business meeting of local Fellows, Professor E. C. C. Baly presiding. A committee under the Chairmanship of Professor A. Robertson was appointed to be responsible for the local activities of the Society.

Extra Meeting held at the Royal Institution, Albemarle Street, W. 1, on Thursday, February 28th, 1935, at 8 p.m.

The President, PROFESSOR G. T. MORGAN, O.B.E., D.Sc., LL.D., F.R.S., was in the Chair.

After briefly introducing the Lecturer, the PRESIDENT called upon Dr. A. S. Russell to deliver the Madame Curie Memorial Lecture. At the conclusion of the lecture, a vote of thanks to Dr. Russell, proposed by Dr. N. V. Sidgwick, and seconded by Professor J. L. Partington, was carried with acclamation. Dr. Russell made brief acknowledgment.

A joint meeting of the Chemical Society and the University of Birmingham Chemical Society was held in the Department of Chemistry of the University, Edgbaston, Birmingham, on March 1st, 1935, at 5 p.m., Professor W. N. HAWORTH, F.R.S., in the Chair. A Lecture on "Recent Progress in Sesquiterpene Chemistry" was delivered by Professor J. L. Simonsen, F.R.S., to an appreciative audience. A vote of thanks to the Lecturer was carried with acclamation.

Ordinary Scientific Meeting, Thursday, March 7th, 1935, at 8 p.m., Professor G. T. MORGAN, O.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 the 8th February, of Arthur John Stacey, who was elected a Fellow on the 15th December, 1870.

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

President (one vacancy): *N. V. SIDGWICK.

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

*G. T. MORGAN. *J. F. THORPE.

Ordinary Members of Council:

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

*J. W. COOK. †R. P. LINSTEAD.
*G. I. FINCH. †H. TERREY.
*†J. J. FOX.

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

†H. T. S. BRITTON.	†H. H. HODGSON,
*†W. A. S. CALDER.	*F. G. MANN.
†F. FAIRBROTHER.	*†J. READ.
†W. E. GARNER.	†H. L. RILEY.
*†T. P. HILDITCH.	†F. L. USHER.

* Nominated by Council under Bye-Law VI.

† Nominated by Fellows under Bye-Law VI.

Mr. Edward Hinks and Mr. B. Topley were appointed Scrutators to assist in the counting of votes recorded in the election of Ordinary Members of Council (Town and Country).

Mr. W. C. Newell was formally admitted a Fellow of the Chemical Society.

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

Frederick Charles Brown, B.Sc., 19, Albert Terrace, Middlesbrough.
Mohammad Omar Farooq, M.Sc., Ph.D., Muslim University, Aligarh, India.
Walter Fletcher, 18, Cherry Nook Road, Deighton, Huddersfield.
Stanley Wilkinson, 10, Rooley Crescent, Rolley Avenue, Bradford.

and for the second time in favour of 14 Candidates.

The following papers were read :

- “Studies in electrolytic oxidation. Part VI. The anodic oxidation of acetates. The mechanism of the Kolbe and Hofer-Moest reactions in aqueous solution.” By S. GLASSTONE and A. HICKLING.
- “The kinetics of the reaction between hydrogen and sulphur at temperatures from 265—350° and pressures of hydrogen in the region of 290—820 mms.” By E. E. AYNSLEY, T. G. PEARSON, and P. L. ROBINSON.
- “The kinetics of the reaction between hydrogen and sulphur. Part II. (a) Formation and characteristics of the unimolecular layer of hydrogen sulphide on the glass surface. (b) Independence of the reaction on the presence of oxygen, moisture, and sulphur dioxide.” By E. E. AYNSLEY and P. L. ROBINSON.

A joint meeting of the Chemical Society and the University of Sheffield Chemical Society was held in the Chemistry Lecture Theatre of the University of Sheffield on Friday, March 15th, 1935, at 5.30 p.m., when Professor F. Paneth addressed a large audience on the subject of “The Simplest Free Radicals.” After outlining the history of the subject, Professor Paneth described the experiments which demonstrated the definite existence of certain simple alkyl and other radicals in the free state; he then indicated how these radicals could be utilised to prepare compounds of antimony and bismuth which had hitherto defied preparation by the ordinary methods. A vote of thanks to the lecturer, proposed by Dr. A. Chapman, and seconded by Dr. T. B. Smith, was carried with acclamation.

Ordinary Scientific Meeting, Thursday, March 21st, 1935, at 8 p.m., Professor G. T. MORGAN, O.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.
Carl Langer	18th June, 1885.	3rd March, 1935.
Marshall Perley Cram	1st December, 1910.	10th October, 1933.

Mr. P. S. Gordon was formally admitted a Fellow of the Society.

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

Edward Henry Ellis, B.Sc., Gramarye, Farley Green, Aldbury, Surrey.
 Richard Norman Jones, M.Sc., 70, Huskisson Street, Liverpool, 8.
 Standish Masterman, B.Sc., 21, Tekels Park, Camberley, Surrey.
 Ernesto Seijo, Dyson Perrins Laboratory, South Parks Road, Oxford.
 Edwin Thompson, J.P., 6, Livingston Drive, Liverpool.

The following forms of Recommendation for Fellowship have been accepted by the Council under Bye-Law I (2) :—

Francis Michel, Dr. 48, Rue de l'Hippodrome, Luxembourg.
 Ralph Edward Oesper, A.M., Ph.D., University of Cincinnati, Ohio, U.S.A.

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

A Discussion on "Recent Progress in the Chemistry of the Terpenes" was opened by Professor J. L. Simonsen, and continued by Professor J. Read, Professor I. M. Heilbron, Professor G. R. Clemo, Dr. R. P. Linstead, Dr. H. N. Rydon, and Professor J. W. Cook.

HABER MEMORIAL LECTURE.

The Haber Memorial Lecture arranged for Thursday, May 23rd, 1935, has been unavoidably postponed. A further announcement will be made at a later date.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee consisting of the Presidents of the Chemical Society, the Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will proceed to make an award of the Harrison Prize in December 1935, provided that, in the opinion of the Committee, there is a candidate of sufficient distinction to warrant the award of the Prize.

The Prize, of the value of about £150, is to be awarded to the chemist of either sex, being a natural born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, during the previous five years has conducted the most meritorious and promising original investigations in any branch of pure or applied chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should contain the following information :

- (a) Name (in full).
- (b) Age (birth certificate to accompany application).
- (c) Degrees (name of University where obtained).
- (d) Other qualifications.
- (e) Experience.
- (f) Titles of published papers, with authors' names, including full references to publication.
- (g) Where research was carried out.
- (h) Testimonials or references.
- (i) Any other information bearing on the application.

The Selection Committee is prepared to receive applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by

The President,
 The Chemical Society,
 Burlington House,
 Piccadilly,
 London, W. 1.

not later than Monday, December 2nd, 1935.

BRITISH CHEMICAL PLANT EXHIBITION IN 1936.

The British Chemical Plant Manufacturers' Association has drawn the attention of chemical plant manufacturers to the intention of the Association to organise a British Chemical Plant Exhibition in conjunction with the Chemical Engineering Congress which is to be held in June 1936.

The Association is in a position at present to indicate broadly the proposals for the exhibition, and by circularising potential exhibitors, is seeking to build up a mailing list for use when the detailed prospectus of the exhibition is ready for distribution.

Further particulars can be obtained from the Secretary of the Association at 166, Piccadilly, London, W.1.

THIRD INTERNATIONAL CONGRESS OF SOIL SCIENCE.

Oxford, July 30th to August 7th, 1935.

The Third International Congress of Soil Science will be held in Oxford from July 30th to August 7th, this year, under the presidency of Sir John Russell, D.Sc., F.R.S. The two previous congresses of the series were held in Washington in 1927 and in Leningrad and Moscow in 1930, and were notable for the exceptionally international character of the personnel and the discussions. The Congress will meet as a whole in six plenary sessions, at which a general survey of recent advances in every branch of soil science will be made, and it will also work in sections or "Commissions" dealing specifically with soil physics (I), chemistry (II), biology (III), fertility (IV), classification (V), and technology (VI). Three sub-Commissions will discuss problems relating to alkali, forest, and peat soils, respectively. A 16-days excursion round Great Britain leaving Oxford immediately after the Congress, and terminating in Cambridge on August 23rd, is being arranged for the benefit of members wishing to obtain first-hand knowledge of British agriculture and soils.

Every member of the Congress will receive a copy of the official *Transactions*, including the full text of papers read at the plenary sessions, and detailed reports of the discussions at the Commission sessions. The cost of the *Transactions* will be included in the Congress fee (£2), payment of which will also entitle members to attend all meetings, receptions, etc., held in connection with the Congress. Accommodation during the Congress in an Oxford College may be reserved through the Organising Committee, or privately in hotels or boarding-houses.

Intimation of attendance at the Congress should be sent as soon as possible to the Secretary of the Organising Committee, Mr. G. V. Jacks, Imperial Bureau of Soil Science, Harpenden, England, from whom all further information may be obtained.

List of papers, or abstracts thereof, received between February 21st and March 21st, 1935. (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.)

"2 : 4-Dinitrodiphenylsulphones." By J. D. LOUDON.

"Volumetric determination of small concentrations of weak bases." By J. W. BAKER and W. S. NATHAN.

"The mechanism of aromatic side-chain reactions with special reference to the polar effects of substituents. Part III. The effect of unipolar substituents on the critical energy and probability factors in the interaction of benzyl bromide with pyridine and α -picoline in various solvents." By J. W. BAKER and W. S. NATHAN.

"The preparation of organic compounds containing deuterium. Dideuteromalonic deuteracid and trideuteracetic deuteracid." By C. L. WILSON.

"The mononitration of α -naphthol and of α -naphthyl methyl ether, and the monoreduction of 2 : 4-dinitro- α -naphthol." By H. H. HODGSON and F. W. SMITH.

"The constitution and reactions of thiocarbonyl tetrachloride. Part II. Reaction with primary arylamines, phenols and reducing agents." By J. M. CONNOLLY and G. M. DYSON

- “The transformation of glucose into galactose and gulose by simple optical inversion.” By J. W. H. OLDHAM and G. J. ROBERTSON.
- “Studies in dielectric polarisation. Part XII. Dipole moments and structure of thiopyrones and related compounds.” By F. ARNDT, G. T. O. MARTIN, and J. R. PARTINGTON.
- “The modes of addition to conjugated unsaturated systems. Part VIII. Reduction of α -vinylcinnamic acid.” By C. K. INGOLD and M. A. T. ROGERS.
- “Influence of poles and polar linkings on the course pursued by elimination reactions. Part XXII. Wagner arrangement in the Hofmann degradation.” By C. K. INGOLD and M. A. T. ROGERS.
- “Studies in pyrolysis. Part II. The pyrolysis of derivatives of α -acetoxyisobutyric acid, and related substances.” By R. BURNS, D. T. JONES, and P. D. RITCHIE.
- “Absorption spectra of polycyclic hydrocarbons. Part I. Alkyl-substituted phenanthrenes.” By F. A. ASKEW.
- “Absorption spectra of polycyclic hydrocarbons. Part II. Partially reduced derivatives of phenanthrene, etc.” By F. A. ASKEW.
- “The cyclic methylene amines. Part III. The action of benzoyl chloride and hydrogen sulphide.” By J. G. GRAYMORE.
- “The electrical polarisation of concentrated solutions of nitrobenzene, with special reference to the validity of the Sugden relation.” By H. O. JENKINS and L. E. SUTTON.
- “Organic compounds of sulphur. Part XXV. The interaction between organic azides and aromatic thioketones and a new method of converting the azido-group into the amino-group.” By A. SCHÖNBERG and W. URBAN.
- “Studies in dielectric polarisation. Part XIII. The dipole moments of the simpler alkyl cyanides.” By E. G. COWLEY and J. R. PARTINGTON.
- “The oxidation of phenylhydrazine by its hydrochloride, and the mechanism of osazone formation.” By J. KENNER and E. C. KNIGHT.
- “Studies in pyrolysis. Part III. The pyrolysis of carbonic and sulphurous esters.” By P. D. RITCHIE.
- “An X-ray study of the structure of the phthalocyanines. Part I. The metal-free, nickel, copper, and platinum compounds.” By J. M. ROBERTSON.
- “The mechanism of polymerisation reactions. Part IV. 1-Phenylbutadiene.” By E. BERGMANN.
- “Remarks on the structure of naphthalene.” By E. BERGMANN and J. HIRSHBERG.
- “Note on an unusual case of racemisation.” By E. BERGMANN and R. HARTROTT.
- “The rearrangement of thiocyanates into isothiocyanates.” By E. BERGMANN.
- “Migration of allyl groups in the ethyl acetoacetate series.” By E. BERGMANN and H. CERTE.
- “The rearrangement of allyl ethers in the purine series.” By E. BERGMANN and H. HEIMHOLD.
- “On the hydrogenation of allyl ethers.” By E. BERGMANN and H. HEIMHOLD.
- “Rearrangement of methoxy-pyrimidines and purines.” By E. BERGMANN and H. HEIMHOLD.
- “Grignard reactions with phthalic anhydrides.” By C. WEIZMANN, E. BERGMANN, and F. BERGMANN.
- “The reaction of Grignard reagents on some succinic anhydrides.” By C. WEIZMANN, O. BLUM-BERGMANN, and F. BERGMANN.
- “Dipole moment and molecular structure. Part XIV. 2:2'-Difluorodibiphenylene-ethylene.” By E. BERGMANN.
- “Dipole moment and molecular structure. Part XV. The spatial configuration of the allene system.” By E. BERGMANN and G. C. HAMPSON.
- “Dipole moment and molecular structure. Part XVI. Configuration of ethylenic compounds.” By E. BERGMANN.
- “The relation between polarisability and nuclear separation for simple diatomic molecules.” By F. R. GOSS.

- “On the factors determining the velocity of reactions in solution. Molecular statistics of the esterification of carboxylic acids.” By C. N. HINSHELWOOD and A. R. LEGARD.
- “The caryophyllenes. Part II.” By G. R. RAMAGE and J. L. SIMONSEN.
- “The magnetic susceptibility of cadmium compounds.” By (Miss) W. R. A. HOLLENS and J. F. SPENCER.
- “The direction of the electric moment of the N C-group.” By A. WEISSBERGER and R. SÄNGEWALD.
- “Preparation of *d*-mannuronic acid and its derivatives.” By R. G. AULT, W. N. HAWORTH, and E. L. HIRST.
- “Mercury derivatives of camphor. Part II.” By J. D. LOUDON.
- “Complex formation between polynitro-compounds and aromatic hydrocarbons. Part I. Finite reaction rates between dimethyl 4 : 6 : 4' : 6'-tetranitrodiphenate and indene.” By D. LL. HAMMICK and G. SIXSMITH.
- “The mechanism of diazotisation.” By J. REILLY and P. J. DRUMM.
- “The planar configuration of diamagnetic nickel complexes. Part II.” By H. J. CAVELL and S. SUGDEN.
- “The configurations of the disulphoxides of thianthren.” By T. W. J. TAYLOR.
- “The densities of aqueous solutions of potassium acetate and laurate.” By C. R. BURY and G. A. PARRY.
- “Studies in chelation. Part II. The stabilisation of Kekulé forms in *o*-hydroxyacetophenones.” By W. BAKER and (Miss) O. M. LOTHIAN.
- “Monomethyl hexoses. Part I. The constitution of the supposed 4-methyl glucose.” By J. MUNRO and E. G. V. PERCIVAL.
- “The kinetics of the decomposition of diphenyliodonium iodide.” By C. J. M. FLETCHER and C. N. HINSHELWOOD.
- “The reaction of hydrogen chloride with methyl alcohol.” By C. N. HINSHELWOOD.
- “Studies in the synthesis of vitamin-A. Part I.” By W. H. DAVIES, I. M. HEILBRON, W. E. JONES, and A. LOWE.
- “The constituents of natural phenolic resins. Part I. Matairesinol.” By R. D. HAWORTH and T. RICHARDSON.
- “The constituents of natural phenolic resins. Part II. ‘Sulphite-liquors lactone.’” By R. D. HAWORTH and G. SHELDRIK.
- “Investigations in the diphenylene oxide series.” Part V. By N. M. CULLINANE and H. J. H. PADFIELD.
- “Charcoal as a catalyst of stereoisomeric change in disulphoxides.” By T. W. J. TAYLOR and W. C. J. COUGHTREY.
- “The dissociation constants of organic acids. Part XII. A new buffer: phenylacetic acid-sodium phenylacetate.” By W. L. GERMAN and A. I. VOGEL.
- “Addition compounds of the carbohydrates. Part II. Potassium hydroxide-sucrose.” By E. G. V. PERCIVAL.
- “The formation of *m*-xylene from its *p*-isomeride by pyrolysis.” By G. BADDELEY and J. KENNER.
- “The action of selenium on compounds containing angular methyl groups.” By G. R. CLEMO and H. G. DICKENSON.
- “Derivatives of *o*-piperonal.” By T. S. STEVENS.
- “Synthetical experiments on protopine and allied alkaloids. Part II. New synthesis of the berberine ring-system, and of a ring-homologue of the aporphine alkaloids.” By T. S. STEVENS.
- “The specificity of iron as a catalyst for the reaction between hydrogen peroxide and pyrogallol.” By A. WASSERMANN.
- “Syntheses of polycyclic compounds related to the sterols. Part IV. The identification of 3'-methyl-1: 2-cyclopentenophenanthrene and its preparation from cholesterol.” By D. J. C. GAMBLE, G. A. R. KON, and B. SAUNDERS.
- “Identification of the 12-heteropoly acids and their salts by means of X-ray powder photographs.” By J. W. ILLINGWORTH and J. F. KEGGIN.

ERRATUM.

Proceedings, January, 1935.

Page. Line.
3 28 for "Flavones" read "Flavanones."

ADDITIONS TO THE LIBRARY.

I. Donations.

ASSOCIATION OF BRITISH CHEMICAL MANUFACTURERS. British chemicals and their manufacturers. London 1935. pp. 459. (*Reference.*) From the Association.

BRITISH PLASTICS YEAR BOOK 1935. The handbook and guide to the plastics industry. London 1935. pp. 717. ill. (*Reference.*) 15s. net.

From the Publishers: Plastics Press, Ltd.

FEDERAZIONE NAZIONALE FASCISTA DEGLI INDUSTRIALI DEI PRODOTTI CHIMICI. Bollettino d'Informazioni. Supplemento a "La chimica e l'industria." Vol. I, etc. Roma 1935+. (*Reference.*) From the Federation.

HAN, JOHN E. S. Laboratory manual of industrial chemistry: largely based on ALLEN ROGERS'S "Laboratory guide of industrial chemistry" [with additions]. Shanghai 1924. pp. xiv. + 530. ill. [*In Chinese.*] (*Recd.* 5/3/35.) From Dr. F. A. Freeth, O.B.E.

INDIAN ACADEMY OF SCIENCES. Proceedings. Vol. I, etc. Bangalore 1934+. (*Reference.*) From the Director.

INSTITUT INTERNATIONAL DE PHYSIQUE SOLVAY. Septième Conseil de Physique tenu à Bruxelles, 1933. Structure et propriétés des noyaux atomiques. Paris 1934. pp. xxvi + 353. ill. (*Reference.*) 75 fr.

From Sir William Pope, K.B.E.

JONES, H. E. The life, growth and disintegration of cells, and the decomposition of water and organic material. Glasgow 1935. pp. 86. ill. 7s. 6d. net. (*Recd.* 25/2/35.)

From the Publishers: Messrs. John Smith & Son (Glasgow).

KING, ALEXANDER, and FROMHERZ, HANS. German-English chemical terminology: an introduction to chemistry in English and German. London 1934. pp. xvii + 324. 12s. 6d. net. (*Recd.* 16/2/35.)

From Mr. A. King.

LOMONOSSOW, M. W. Complete works. Vol. VII. Edited by B. N. MENSCHUTKIN. Leningrad 1934. pp. vi + 591. [*In Russian.*] (*Recd.* 28/2/35.) From the Editor.

NATIONAL TSING HUA UNIVERSITY. Science Reports. Series A. Mathematical and physical sciences. Vol. I, etc. Peiping 1931+. (*Reference.*)

From the Bureau of Chemical Abstracts.

PLATZMANN, C. R. International dictionary of cement: English-French-German-Spanish. London [1935.] pp. iv + 66. (*Reference.*) 7s. 6d. net.

From the Publishers: Concrete Publications, Ltd. ROYAL COMMISSION ON SEWAGE DISPOSAL. 15 Vols. of Reports. 1902-13.

From Dr. H. J. Calvert.

SOCIEDAD QUIMICA DEL PERU. Boletín. Vol. I, etc. Lima 1934+. (*Reference.*)

From the Society.

UNIVERSAL OIL PRODUCTS COMPANY. U.O.P. Booklets. Chicago 1923+. [*Incomplete.*]

— *Research Laboratories.* Library Bulletin of Abstracts. Vol. X, etc. Chicago 1935+. (*Reference.*) From the Director.

ZAVODSKAYA LABORATORIYA. Vol. III, etc. Moscow 1934+. (*Reference.*)

From the Bureau of Chemical Abstracts.

II. By Purchase.

BOMSKOV, CHRISTIAN. Methodik der Vitaminforschung. Leipzig 1935. pp. xvi + 301. ill. M. 26. (*Recd.* 6/3/35.)

FREY-WYSSLING, A. Die Stoffausscheidung der höheren Pflanzen. Berlin 1935. pp. xii + 378. ill. M. 29.40. (*Recd.* 12/3/35.)

FISHER, R. A. Statistical methods for research workers. 5th edition. Edinburgh 1934. pp. xvi + 319 + vi tables. ill. 15s. net. (*Recd.* 21/2/35.)

GROGGINS, P. H. [Editor-in-Chief.] Unit processes in organic synthesis. New York 1935. pp. xii + 689. ill. \$5.50. (*Recd.* 21/2/35.)

KRÄNZLEIN, GEORG. Werden Sein und Vergehen der künstlichen organischen Farbstoffe. (Sammlung, N.F. Heft 25.) Leipzig 1935. pp. 57. M. 2.90.

KRAUSE, ARLINGTON C. The biochemistry of the eye. Baltimore 1934. pp. xvi + 264. ill. \$3.25. (*Recd.* 21/2/35.)

LUTZ, G. Gewerbehygiene. Stuttgart 1932. pp. 232. M. 9. (*Recd.* 11/3/35.)

MILLIKAN, ROBERT ANDREWS. Elektrons (+ and -), protons, photons, neutrons, and cosmic rays. Chicago 1935. pp. x + 492. ill. \$3.50. (*Recd.* 16/2/35.)

SEMENOFF, N. Chemical kinetics and chain reactions. Oxford 1935. pp. xii + 480. ill. 35s. net. (*Recd.* 21/2/35.)

FORTHCOMING MEETINGS OUTSIDE LONDON.*ABERDEEN.*

Friday, May 17th, 1935. Joint meeting with the Institute of Chemistry and Society of Chemical Industry at the University of Aberdeen. Dr. Ian M. Robertson of the Macaulay Institute for Soil Research will read a paper entitled "The Agricultural Utilisation of Peat Land." An informal dinner will be held after the meeting.

Saturday, May 18th, 1935. Visit to the Macaulay Institute for Soil Research, Craigiebuckler, Aberdeen, and an excursion.

Further particulars of the meetings will be announced later.

CAMBRIDGE.

An Ordinary Scientific Meeting for the reading of original communications will be held at the University Chemical Laboratory, Pembroke Street, Cambridge, at 2.30 p.m., on Saturday May 11th, 1935. The President will be in the Chair.

The meeting will be followed by tea at 4.30 p.m., and visitors will be welcomed at the Chemical Laboratories afterwards. Luncheon (price 4s. inclusive) will be provided at Emmanuel College, at 1 p.m. Fellows and their guests who intend to be present at the luncheon should inform Dr. R. G. W. Norrish, Emmanuel College, Cambridge, not later than the 9th May.

LEEDS.

Thursday, April 25th, 1935, at 7 p.m., in the Chemistry Lecture Theatre of the University. A meeting for the reading of papers.

FORTHCOMING MEETINGS IN LONDON.

Thursday, April 4th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

The following papers will be read :

"Studies in chemisorption on charcoal." By A. KING.

"4(5)- β -Alkylaminoethylglyoxalines." By B. GARFORTH and F. L. PYMAN.

"The influence of variations in structure on the reactivity of an alcohol with hydrobromic acid." By G. M. BENNETT and F. M. REYNOLDS.

Thursday, May 2nd, 1935, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, May 16th, 1935, at 8 p.m.

Discussion on "The Significance of Phosphoric Esters in Biochemical Processes" to be opened by Professor R. Robison, D.Sc., F.R.S.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

The Anniversary Dinner of the Society was held at Grosvenor House, Park Lane, W.1, on Thursday, 28th March, 1935, at 7.30 p.m. The President, Professor G. T. MORGAN, O.B.E., D.Sc., LL.D., F.R.S., presided, the number present being 235. The Most Honourable The Marquess of Reading was the principal guest of the evening, and was accompanied by Lady Reading. Among the official guests present were Professor E. C. C. Baly (President, The British Association of Chemists), Sir William Bragg (Director, The Royal Institution), Sir Henry Dale (Secretary, The Royal Society), Mr. John Evans (President, The Society of Public Analysts), Mr. Robert H. Goodsall (Prime Warden, Dyers Company), Sir Harold Hartley (Chairman, Fuel Research Board, Department of Scientific and Industrial Research), Sir Frederick Gowland Hopkins (President, The Royal Society), Major E. Saville Peck (Vice-President, The Pharmaceutical Society), Sir Joseph Petavel (Director, National Physical Laboratory), Dr. F. L. Pyman (Chairman of Committee, The Biochemical Society), W. Rintoul (President, The Faraday Society), Sir Frank Smith (Secretary, The Royal Society), Professor W. M. Thornton (President, The Institution of Electrical Engineers), Professor J. F. Thorpe (President, The Institute of Chemistry), and Mr. E. Wallace (Vice-Chairman, The Association of British Chemical Manufacturers).

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

The Chemical Society. By The Most Honourable The Marquess of READING, P.C., G.C.B., G.C.S.I., G.C.I.E., G.C.V.O. Response by the President, Professor G. T. MORGAN, O.B.E., D.Sc., LL.D., F.R.S.

The Guests. By Dr. N. V. SIDGWICK, O.B.E., M.A., D.Sc., F.R.S., President-Elect. Response by Sir WILLIAM BRAGG, O.M., K.B.E., M.A., D.Sc., F.R.S.

At the conclusion of the Dinner, Dr. N. V. Sidgwick was formally inducted as President.

Ordinary Scientific Meeting, Thursday, April 4th, 1935, at 8 p.m., Dr. N. V. SIDGWICK, O.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 March 14th, of Professor Dr. Arthur Hantzsch, who was elected an Honorary Fellow of the Society on October 17th, 1929, and stated that the Council has passed the following resolution :

“ The President, Officers and Council of the Chemical Society have learnt with profound regret of the death of their distinguished colleague, Professor Arthur Hantzsch, Honorary Fellow of the Society, and desire to record their high appreciation of the eminent services rendered by Professor Hantzsch to the Science of Chemistry. They offer to the relatives of the late Professor Hantzsch their sincere sympathy in the irreparable loss they have sustained.”

The PRESIDENT also referred to the loss sustained by the Society, through death on October 29th, 1934, of Mr. Hubert Vernon Bettley-Cooke, who was elected a Fellow on February 20th, 1930.

It was announced that :

1. The Council had appointed Professor R. Robinson to fill the vacancy among the Vice-Presidents who have not filled the office of President caused by the elevation of Dr. N. V. Sidgwick to the Presidency.

2. The following loyal address of congratulation had been sealed in Council that afternoon and will be presented to His Majesty The King on the occasion of the Silver Jubilee of his accession to the Throne :

To His Most Excellent Majesty King George the Fifth.

May it please Your Majesty.

We, the President, Council and Fellows of The Chemical Society, beg leave to offer to Your Majesty this expression of loyal congratulations on the occasion of the Silver Jubilee of Your Majesty's accession to the Throne.

We recall with pride that Her Most Gracious Majesty Queen Victoria was pleased to grant a Royal Charter to our Society in the twelfth year of her reign, and we bear in grateful remembrance that in the year 1920 Your Majesty graciously granted our petition praying for a supplemental Charter, thus enabling our Society more actively to advance the Science of Chemistry, the object for which the Society was founded almost a century ago.

During the twenty-five eventful years of Your Majesty's illustrious reign, the Science of Chemistry has influenced more widely than ever before the lives of your subjects, by its extension to every industry and art and its application in promoting the health and recreation of the whole community. The Fellows of our Society in the British Commonwealth of Nations and in almost every country of the World appreciate with heartfelt thankfulness the interest which Your Majesty and your Royal forbears have ever graciously shown in the progress of their Science.

We assure Your Majesty of our loyal devotion and of our earnest prayer that Your Majesty may long be spared to reign over your loyal and loving subjects.

(Signed) N. V. SIDGWICK, *President.*
 EMILE MOND, *Treasurer.*
 S. SUGDEN,
 J. MASSON GULLAND, } *Honorary Secretaries.*
 H. J. T. ELLINGHAM. }

Signed in Council on behalf of The Chemical Society this Fourth day of April, One Thousand Nine Hundred and Thirty-Five.

3. The Council had expressed thanks for a donation of £5 from Mr. W. Collingwood Williams towards the funds of the Society and £5 from Dr. G. McGowan as a contribution to the Library.

4. An Extraordinary General Meeting will be held on Thursday, May 9th, 1935, at 5.30 p.m., at which Fellows will have an opportunity of expressing their views on the proposed agreement with the Institute of Chemistry and the Society of Chemical Industry regarding the scheme of co-operation.

The following were formally admitted Fellows of the Chemical Society :

Bertram Garforth, Kathleen W. Robertson, Edward Race, and Uriel Shapiro.

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

John Christopher Jewell, B.Sc., A.R.C.S., 50, Cyril Mansions, Battersea Park, S.W.11.
 Knut Ronaasen, B.Sc., c/o P.O., N'Kana, Northern Rhodesia.
 James Coward Thornton, 10, De Montfort Street, Leicester.

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

James Raeburn Miller, 314A, Pitt Street, Sydney, N.S.W., Australia.
 Maung Tin, M.R.C.S., L.R.C.P., 48, Stewart Road, Rangoon, Burma.

The following papers were read :

- “ Studies in chemisorption on charcoal.” By A. KING.
 “ 4(5)- β -Alkylaminoethylglyoxalines.” By B. GARFORTH and F. L. PYMAN.
 “ The influence of variations in structure on the reactivity of an alcohol with hydrobromic acid.” By G. M. BENNETT and F. M. REYNOLDS.

HABER MEMORIAL LECTURE.

The Haber Memorial Lecture arranged for Thursday, May 23rd, 1935, has been unavoidably postponed. A further announcement will be made at a later date.

NOMENCLATURE OF THE ISOTOPES OF HYDROGEN.

At the meeting of Council on March 21st, 1935, the report of the Special Committee on the Nomenclature of the Isotopes of Hydrogen was adopted. The following recommendations are published for the information of Fellows.

(1) H^2 should be named “ deuterium ” and normally denoted by the symbol D.

(2) H^1 should be named “ protium,” but be normally referred to as hydrogen and denoted by H.

Note : H^2 and H^1 are permissible alternative symbols, since similar symbols are in general use for other isotopic elements.

(3) Used as a prefix, “ deuterium ” should become “ deuterio ” (not “ deuterio ”), and “ deuter ” before a following vowel.

(4) If, for purposes of nomenclature, deuterium be treated as an entirely distinct element, like chlorine or sodium, the naming of deuterium compounds follows well-recognised rules, as in the following examples :

Formula.	Name.
ND_3	Trideuterammonia.
DCl	Deuterium chloride.
$[NH_2D_2]OD$	Dideuterammonium deuterioxide.
$NHD \cdot OD$	$\alpha\beta$ -Dideuterohydroxylamine.
CH_3D	Deuteromethane.
$C_6H_5 \cdot OD$	{ Phenyl deuterioxide.
	{ Deuterium phenoxide.
$1 : 3-C_6H_4D \cdot CH_2D$	ω : 3-Dideuterotoluene.
$1 : 2 : 3-C_6H_3D_2Cl$	1-Chloro-2 : 3-dideuterobenzene.
$DHN \cdot C_2CD \cdot CH \cdot CH \cdot CH$	<i>N</i> : 2-Dideuteraniline.
$CH_2D \cdot CO \cdot NHD$	<i>N\alpha</i> -Dideuteracetamide.
$CH_3 \cdot CH_2 \cdot OD$	{ Deuterium ethoxide.
	{ Ethyl deuterioxide.
$CO_2H \cdot C : C(CO_2D) \cdot CH : CD \cdot CH : CH$	2-Deuterium 1-hydrogen 4-deuterophthalate.
$CHD_2 \cdot CO \cdot OD$	Deuterium dideuteracetate.

(5) The Committee does not favour the Boughton system (see “ Science,” July 27th, 1934, pp. 86-89), since, in its opinion, there is no difficulty in applying the existing system.

(6) The Publication Committee is further of opinion that the deuterium analogues of certain frequently occurring groups might conveniently receive contracted names, such as the following :

Group.	Name.		Example.
D ₂ O (replacing water in hydrates)	deuterate	Na ₂ SO ₄ .7D ₂ O	Sodium sulphate heptadeuterate.
$\text{—C} \begin{array}{l} \text{D} \\ \text{O} \end{array}$	deuterlaldehyde	CH ₃ —C $\begin{array}{l} \text{D} \\ \text{O} \end{array}$	Acetdeuterlaldehyde.
$\text{—C} \begin{array}{l} \text{OD} \\ \text{O} \end{array}$	deuteracid	CH ₃ —C $\begin{array}{l} \text{OD} \\ \text{O} \end{array}$	Acetic deuteracid.
$\text{—C} \begin{array}{l} \text{ND}_2 \\ \text{O} \end{array}$	deuteramide	CH ₃ —C $\begin{array}{l} \text{ND}_2 \\ \text{O} \end{array}$	Acetdeuteramide.
(Alk)—OD	deuterlalcohol	C ₂ H ₅ —OD	Ethyl deuterlalcohol.

Such names, in the opinion of the Committee, would be applicable only when the whole of the hydrogen in the group has been replaced by deuterium (*i.e.* there would be no contracted name for $\text{—C} \begin{array}{l} \text{NHD} \\ \text{O} \end{array}$), and would be alternative to, and not in replacement of, the systematic names derived on the principles of par. 4.

List of Papers, or Abstracts thereof, received between March 21st and April 11th, 1935. (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 structure of tolan.” By A. WEISSBERGER.
- “Some reactions of *o*-hydroxybenzylacetone.” By W. BAKER and J. WALKER.
- “Synthesis of cholanthrene.” By J. W. COOK, G. A. D. HASLEWOOD, and (MRS.) A. M. ROBINSON.
- “Chemistry of imido-chlorides: condensation of benzanilide-imido-chloride with substituted dialkylanilines in the presence of anhydrous aluminium chloride: synthesis of dialkylaminobenzophenones.” By R. C. SHAH and M. B. ICHAPORIA.
- “Thiolsulphonic esters (disulphoxides).” By J. D. LOUDON and A. LIVINGSTON.
- “The action of acetic anhydride on *N*-nitrosophenylglycine and some of its derivatives.” By J. C. EARL and A. W. MACKNEY.
- “A synthesis of 1-hydroxynaphthalene-2:4-dicarboxylic acid.” By B. K. MENON.
- “The odd-membered *n*-primary alcohols (the $\alpha \rightarrow \beta$ transition).” By T. MALKIN.
- “The rotatory dispersion of organic compounds. Part XXV. Open-chain derivatives of arabinose, fructose, and fucose. Optical cancellation in penta-acetyl- μ -fructose.” By W. C. G. BALDWIN, M. L. WOLFROM, and T. M. LOWRY.
- “The rotatory dispersion of organic compounds. Part XXVI. Acetoin.” By T. M. LOWRY and W. C. G. BALDWIN.
- “The Friedel and Crafts reaction in the carbazole series.” By S. G. P. PLANT, (MISS) K. M. ROGERS, and S. B. C. WILLIAMS.
- “Selenium dioxide, a new oxidising agent. Part V. Some further oxidations.” By S. ASTIN, L. DE V. MOULDS, and H. L. RILEY.
- “Properties of the oxides of nitrogen. Part I. The binary system N₂O₄/N₂O₅.” By T. M. LOWRY and J. T. LEMON.
- “Metacetaldehyde: preparation and solvent effect.” By T. S. PATTERSON and (MISS) G. M. HOLMES.
- “Syntheses and molecular complexes in the phenazine series. Part II.” By G. R. CLEMO and H. MCILWAIN.
- “Abnormal reactions of an α -bromo-ketone.” By (MISS) S. M. MCGEOCH and T. S. STEVENS.
- “Factors modifying the polarisation of liquids.” By F. R. GOSS.
- “On the formation of the indene nucleus: the phenylbenzylindenes.” By (MRS.) O. BLUM-BERGMANN.
- “Note on 7-methyl-4-isopropyl-1-hydrindone.” By (MRS.) O. BLUM-BERGMANN.

- “On acetylated sugars with free α -position.” By M. WEIZMANN and L. HASKELBERG.
- “Synthetic experiments with 2 : 3 : 4 : 6-tetra-acetyl glucose, and similar compounds.” By M. WEIZMANN and L. HASKELBERG.
- “A simple relation between molecular polarisation in solution and the dielectric constant of the solvent.” By R. J. W. LE FÈVRE.
- “The reaction of malonic acids with metallic bases.” By C. W. DAVIES.
- “An improved method for the v. Pechmann synthesis of coumarins.” By H. APPEL.
- “The rotatory dispersion of organic compounds. Part XXVII. Menthone and carvomenthone.” By T. M. LOWRY and R. E. LISHMUND.
- “Strychnine and brucine. Part XXXII. Methoxymethylchanodihydrostrychnanic acid and its resistance to facile dehydrogenation.” By (Miss) T. M. REYNOLDS and R. ROBINSON.
- “Leuco-anthocyanins and leuco-anthocyanidins. Part I. The isolation of peltogynol and its molecular structure.” By (Mrs) G. M. ROBINSON and R. ROBINSON.
- “The constitution of cyanomaclurin.” By H. APPEL and R. ROBINSON.
- “A rearrangement of *o*-aminodiphenyl ethers. Part III. 2-Acylamidodiphenyl ethers.” By K. C. ROBERTS and C. G. M. DE WORMS.
- “A rearrangement of *o*-aminodiphenyl ethers. Part IV.” By K. C. ROBERTS and (Miss) H. B. CLARK.
- “The bromination of resorcinol monobenzoate and the nitration of 4 : 6-dibromoresorcinol 3-benzoate. An example of group migration.” By H. H. HODGSON and (in part) R. J. H. DYSON.
- “The rate of decomposition of some *p*-substituted nitrosoacetanilides in benzene.” By W. S. M. GRIEVE and D. H. HEY.
- “Recent progress in the chemistry of the terpenes.” By J. L. SIMONSEN.
- “A new synthesis of chromylium salts. Part II.” By R. ROBINSON and J. WALKER.
- “Experiments on the synthesis of rotenone and its derivatives. Part V. The constitution of *apotoxicarol*.” By R. G. HEYES and A. ROBERTSON.
- “Unsaturated acids of natural oils. Part II. The highly unsaturated acid of the kernels of *Parinarium Laurinum*.” By E. H. FARMER and E. SUNDERLAND.
- “Unsaturated acids of natural oils. Part III. The highly unsaturated acid of the kernels of *Parinarium Macrophyllum*.” By W. B. BROWN and E. H. FARMER.
- “Derivatives of 3 : 5-dihalogen-substituted anilines.” By F. D. CHATTAWAY and G. D. PARKES.
- “The planar structure of quadricovalent cupric compounds.” By E. G. COX and K. C. WEBSTER.
- “Complex anion formation by trivalent elements: the structure of cæsium thallic enneachloride.” By H. M. POWELL and A. F. WELLS.
- “Acetone derivatives of methylglycosides.” By R. G. AULT, W. N. HAWORTH, and E. L. HIRST.
- “Picrotoxin. Part I. The constitution of picrotic acid and the C-skeleton of picrotoxinin and picrotin.” By D. MERCER, A. ROBERTSON, and (in part) R. S. CAHN.
- “Experiments on the synthesis of rotenone and its derivatives. Part VI. Chromenochromones.” By H. I. KING and A. ROBERTSON.
- “2-Iodo-3-hydroxybenzoic acid.” By T. A. HENRY and T. M. SHARP.
- “Compounds of α -benzoin oxime with bivalent metals.” By J. S. JENNINGS, E. SHARRATT, and W. WARDLAW.
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FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, MAY 2nd, 1935.

ALBERT, ADRIEN, c/o Y.M.C.A. Central, Great Russell Street, W.C. 1. British (Australian). Research Student, College of Pharm. Soc., London University. B.Sc. (Sydney). Publications: "Natural and Artificial Colourings used in Pharmacy," *Aust. J. Pharm.*, 1932, **13**, 1046; "Triethanolamine" (with S. Rubbo), *ibid.*, 955; "Analysis of Mixtures of Aspirin, Phenacetin, and Caffeine" (with H. Finnemore), *ibid.*, 884; "Morphine Benzoate and Morphine Phenylacetate," *ibid.*, 1933, **14**, 442. Positions held: Lecturer—Night Classes held by the Pharmaceutical Society of New South Wales. Industrial Chemist to R. C. Henderson, Ltd., Sydney. (Signed by) Wilfred H. Linnell, T. F. Wallis, T. A. Henry.

APPEL, HERBERT HANS KARL AUGUST, The Dyson Perrins Laboratory, Oxford. German. Chemical Research Assistant. Dr.phil. (Leipzig). Have published following, alone or collaboratively: *Ber.*, 1931, **64**, 1841. *Z. physiol. Chem.*, 1932, **205**, 231; 1933, **215**, 277; 1933, **218**, 202. *Helvet.*, 1934, **17**, 1574. "Sammlung chemischer u. chem.-technischer Vorträge," 1934, Heft 23. (Signed by) D. Ll. Hammick, R. Robinson, James Walker.

BREMNER, JOHN GEORGE MACKAY, Jesus College, Oxford. British. Research Student. B.A. and B.Sc., Oxford. Researching on "Thermal Accommodation Coefficients of Gases," as D.Phil. Thesis. Date of birth Nov. 10th, 1910. (Signed by) James Walker, A. D. Ainley, W. S. Rapson.

BROWN, CHARLES WILLIAM ARNOLD, 48, Oakhill Road, Putney, S.W. 15. British. Schoolmaster. B.Sc. (1st Class Hons.), Birmingham; M.Sc., London. Student, Honours School Chemistry, Birmingham University, 1925. Research Student, London University, 1930 to date, in Physical Chemistry. Senior Science Master, Sloane School, Chelsea, S.W. 10. (Signed by) J. C. Crocker, J. H. Middleditch, Sidney S. Woolf.

BROWN, FREDERICK CHARLES, 19, Albert Terrace, Middlesbrough, Yorkshire. British. Teacher of Chemistry. B.Sc. (London), 1925, 2nd Class Hons. in Chemistry. (Signed by) Ernest W. Jackson, A. Scholes, Cecil F. Tidman.

ELLIOTT, REGINALD LANGHAM, 23, Paddock Street, Wigston, Leicester. British. Research Student. Special Internal B.Sc. 1st Class Hons. Chem., Queen Mary College (Univ. of London), 1933. Since Oct. 1933, as holder of British Dyes Scholarship—full-time research in Dept. of Colour Chemistry, Huddersfield Technical College (Registered for London Ph.D.). Lecturer in Evening Dept. of H.T.C., Chemistry Dept. Temporary Chemistry Master at Alderman Newton's School, Leicester, June–July, 1933. *J.C.S.*, 1934, p. 1705, "The 3-Halogeno-1-nitro-, -1-amino- and -1-hydroxy-naphthalenes," Hodgson and Elliott. Date of birth Aug. 21st, 1911. (Signed by) James Bruce, H. D. K. Drew, Herbert H. Hodgson.

ELLIS, EDWARD HENRY, "Gramarve," Farley Green, Albury, Surrey. British. Private research worker. B.Sc. (London). Formerly of Dept. of Botany, British Museum (Natural History), S.W., and Lecturer in Biology, Kingston Technical College. Requires to join Society for Library facilities. (Signed by) Paul Haas, George Discombe, Gerald Druce.

FAROOQ, MOHAMMAD OMAR, Muslim University, Aligarh. Indian. Demonstrator, University, Aligarh. M.Sc., Ph.D. (Aligarh). Four papers published in collaboration with Professor R. F. Hunter in *J. Indian Chem. Soc.*, 1932, **545**; 1933, **189**, 465, 563. (Signed by) R. F. Hunter, R. D. Desai, G. T. Morgan.

FIELD, JOHN, 30, Hills Road, Cambridge. British. Research Student. B.A., Cambridge University. My reasons for wishing to join the Society are that I may keep in touch with the progress of Chemistry, and receive the publications of the Society. Date of birth Apr. 27th, 1913. (Signed by) Eric K. Rideal, Richard M. Barrer, H. W. Melville.

FLETCHER, WALTER, 18, Cherry Nook Road, Deighton, Huddersfield, Yorkshire. British. Dyestuffs Chemist. To obtain the *Journal of the Chemical Society* and to make use of the library to assist me in my studies. Date of birth Nov. 6th, 1913. (Signed by) Herbert H. Hodgson, James Bruce, Seth Taylor.

GUEST, RONALD ARTHUR POWELL, 15, St. Margaret's Road, Oxford. British. Research Student. B.A. (Oxford). Desirous of keeping in touch with developments in Chemistry. At present engaged in Research on Sulphur Monoxide. Date of birth July 12th, 1913. (Signed by) D. L. Chapman, H. J. George, J. C. Smith.

HURST, CLAUDE, Jesus College, Oxford. British. Fellow and Tutor in Mathematics and Physics. M.A. (Oxon.); D.Phil. (Oxon.). Papers in *Proc. Roy. Soc.*: "On Metallic Dispersion

in the Near Infra-red," *A*, 144, 1934; "The Emission Constants of Metals in the Near Infra-red," *A*, 142, 1932. (*Signed by*) H. J. George, D. L. Chapman, Allan F. Walden.

HUTTON, ROBERT SALMON, 1, Chaucer Road, Cambridge. British. Goldsmiths Professor of Metallurgy, Cambridge University. D.Sc. (Manchester), M.A. (Cambridge). Has already qualified as a Fellow in 1900, and now wishes to rejoin upon taking up Academic work again. (*Signed by*) W. J. Pope, F. G. Mann, J. B. Whitworth.

JENNER, ALAN JAMES MARTIN, 27, Argyle Street, Oxford. British. Research Student. B.A. (Oxford). Researching on "Thermal Decomposition of Formaldehyde" to be submitted for B.Sc. degree. Date of birth Nov. 11th, 1912. (*Signed by*) James Walker, A. D. Ainley, W. S. Rapson.

JOUNSON, ERIC IAN, 5, Bedford Road, Wanstead, E. 18. British. Chemist. M.Sc. (London). East London College, 1927—1930. Government Laboratory, 1930—1935. *J.C.S.*, 1930, 1510; 1931, 86. (*Signed by*) A. G. Francis, H. C. Gull, A. More, George H. Croft.

JONES, RICHARD NORMAN, 70, Huskisson Street, Liverpool, 8. British. Research Student in Chemistry. B.Sc. (Hons.), Manchester; M.Sc., Manchester. Since graduation, in 1933, I have worked for one year on carbohydrate metabolism in muscular tissue in the Physiology Dept. at Manchester University. I have published two communications in *Proc. Phys. Soc.*: (i) R. N. Jones, *J. Physiol.*, 1935, 93, 34v; (ii) *J. Physiol.*, 93 (in press), and have been elected Hill Prizeman in Biochemistry. I am now working in the Organic Chemistry Dept. at Manchester with Prof. Heilbron on the isolation and constitution of carotenoid pigments. Date of birth Mar. 20th, 1913. (*Signed by*) I. M. Heilbron, F. Fairbrother, G. N. Burkhardt.

KRISHNA, SHRI, c/o Forest Research Institute and College, New Forest P.O., Dehra Dun, U.P., India. Indian. Biochemist, Forest Res. Inst. and College. M.Sc. (Punjab), 1918; Ph.D. (London), 1921; D.Sc. (London), 1923. *J.C.S.*, 1921, 286, 1420; 1922, 253, 798; 1923, 156, 2782, 2786. (*Signed by*) P. K. Dutt, A. J. Allmand, Samuel Smiles.

MASTERMAN, STANDISH, 21, Tekels Park, Camberley, Surrey. British. Research Student. B.Sc., Chemistry Special, University College, London. Reasons for desiring membership: To obtain direct access to the library and to receive the *Journal*. Date of birth, September 8th, 1912. (*Signed by*) C. K. Ingold, E. D. Hughes, J. N. E. Day.

MAWSON, MAY, 15, Lansdown Rd., Gloucester. British. Lecturer in Chemistry, Physics, and Mathematics at the Technical College, Gloucester. M.Sc. (B'ham.), Research in Physics, B.Sc. Hons. (London), A.R.C.S. (London). (*Signed by*) G. Malcolm Dyson, G. T. Morgan, Arthur Bramley, James Bruce, Herbert H. Hodgson, G. Lawton.

NUKADA, SUSUMU, Teikoku Medical and Pharmaceutical College for Women, Ohmori, Tokyo, Japan. Japanese. Director of the Teikoku M. and Ph. College for Women. "Experimentelle Untersuchungen über die Einflüsse minimaler Menge von Heterobakterien auf das Fieber durch 'Typhusbazillen,'" *Arch. exper. Path. Pharm.*, 163 Band., 6 Heft, S. 700, 1932. "Über Schwankungen der Resistenz gegen Colibazilleninfektion nach Immunisierung mit Heterobakterien," *Zeitschrift für Immunitätsforschung*, Bd. 79, 1933, Heft 3/4, S. 297, U.S.W. (*Signed by*) Yasuhiko Asahina, Junzo Shinoda, Shigehiko Sugasawa.

OGSTON, ALEXANDER GEORGE, Balliol College, Oxford. British. Demonstrator of Chemistry (Balliol and Trinity Colleges). B.A. (Oxford) 1933. Qualified for B.Sc. (1933). Reasons for wishing to become a Fellow: that I desire to remain in intimate touch with contemporary chemistry, and if possible to contribute to knowledge of it. Date of birth, Jan. 30th, 1911. (*Signed by*) E. J. Bowen, J. H. Wolfenden, Ronald P. Bell.

REYNOLDS, PETER WILLIAM, "Aurora," Cumnor Hill, Oxford. British. Research Student. B.A. (Oxford). Desire to keep in touch with modern development. Conducting original research (under supervision of D. L. Chapman, F.R.S.) on catalysis by metals. Publication pending. Date of birth, July 4th, 1913. (*Signed by*) R. Robinson, Frederick M. Brewer, D. L. Chapman.

SEIJO, ERNESTO, Dyson Perrins Laboratory, Oxford. Spanish. Student. Licenciado en Ciencias y Farmacia, Santiago (Spain). "La Nitracion del 2:2'-Dioxidifenilo: Descripcion de un Nuevo Derivado Dinitrado" (with F. CALVET). *Anal. Fis. Quim.*, xxxi, 882. "Las Dioxinas 1:3. IV. La Condensacion del 3:3-Dinitro-, 3:5'-Dinitro-, and 5:5'-Dinitro-2:2'-dioxidifenilo con Formaldehido" (with F. CALVET), *ibid.*, 889. (*Signed by*) J. C. Smith, Robert Robinson, James Walker.

SMITH, LEONARD HART, 232, Woodstock Road, Oxford. Australian. Student. M.Sc. (Melbourne). With K. N. Welch, M.Sc., Ph.D., A.I.C., "A New Addition Compound of Phenol and Hexamethylene Tetramine: Note," *J.C.S.*, 1934, 739; "The Preparation of *p*-Dimethylaminobenzyl Alcohol: Note," *J.C.S.*, 1934, 730; "A Contribution to the Chemistry of the

Knoevenagel and Similar Reactions," *J.C.S.*, 1934, 1136. (*Signed by*) D. Ll. Hammick, W. S. Rapson, J. C. Smith.

THOMPSON, EDWIN, 6, Livingston Drive, Liverpool. British. Chemical Plant Manufacture. President, Society of Chemical Industry. (*Signed by*) G. T. Morgan, Francis H. Carr, J. Davidson Pratt.

VICKERS, EDWARD JERVIS, Jesus College, Oxford. British. Research Student. B.A. (Oxford). Conducting research on (a) Synthesis of Cerebrosides. (b) Synthesis of *cyclo*Pentane Derivatives. Both under supervision of Professor Robinson. Date of birth, July 10th, 1912. (*Signed by*) Robert Robinson, J. C. Smith, D. L. Chapman.

WILKINSON, STANLEY, 10, Rooley Crescent, Rooley Avenue, Bradford, Yorks. British. Manager of Chemical Works. Former Student of Chemistry Dept., at Bradford Technical College, and now Manager at Messrs. J. B. Wilkinson, Dudley Hill Chemical Works, Bradford. (*Signed by*) G. T. Morgan, Frederick Challenger, W. A. Wightman, E. Rothstein.

WOODS, STEPHEN ESSLEMONT, 41, Beda Road, Canton, Cardiff (Present Address, Jesus College, Oxford). British. Research Student. B.A., B.Sc., Oxford. Research work on "Decomposition of Nitrogen Trichloride." Demonstrator in Jesus College Laboratories, Oxford, 1933—1934. Date of birth, Jan. 12th, 1912. (*Signed by*) James Walker, A. D. Ainley, W. S. Rapson.

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

CAROTHERS, WALLACE H., Wilmington, Del., U.S.A., c/o du Pont Experimental Station, U.S.A. Research Chemist. B.S. Tarkio College, M.S., Ph.D. University of Illinois. One time Instructor at University of Illinois and at Harvard University. Editor *Organic Syntheses*; Associate Editor *J. Amer. Chem. Soc.* Published papers in *J. Amer. Chem. Soc.*, 1923, 45, 1734; 1924, 46, 2227; 1928, 48, 3192; 1929, 51, 588; *ibid.*, 2548, 2560; 1930, 52, 314, 711, 1254, 3292, 5279; 1931, 53, 4203; 1932, 54, 761, 1557, 1559, 4071, etc. (*Signed by*) N. V. Sidgwick.

HARLOW, EDGAR AUGUSTUS, South Travancore Medical Mission, Neyyoor, Travancore, India. English. Pharmacist and Business Manager. Member, Society of Radiographers (London). Manufacturing Chemist, and Lecturer in Pharmacy to Students in the above institution. (*Signed by*) G. T. Morgan, H. B. Tilden.

MA, CHU-MING, National Research Institute of Chemistry, Academia Sinica, Shanghai, China. Chinese. Research Assistant. B.Sc. from North-eastern University, Mukden, China. 1. "A Preliminary Report on Chemical Constituents of the Chinese Drug Yuan-Shen," *Trans. Sci. Soc. China*, VII, 187—194. 2. Research Student, Yenching Univ. Paper: "Butyl and Amyl Ethers of Naphthols and some of their Derivatives," *J.C.C.S.*, I, 11—16. 3. Assistant in Chemistry, Chekiang University. Paper: "Molecular Rearrangement of Ethyl 2-Ethylmercapto-6-thiocyanopyrimidine-5-acetate," *J.A.C.S.*, 55, 4655—4657. (*Signed by*) Y. F. Chi.

MANDELSTAM, LEOPOLD, c/o Consolidated Oil Products, Ltd., P.O. Box 89, Johannesburg, South African. Chemical Engineer. M.Sc. (Riga), also A.M.I.Chem.E. 1928—1931, Chief Chemist, Sociadada d'Oleos Ltd., Lourenço, Marques, Por. East Africa; 1926—1928, Chief Chemist, Consolidated Soap, Ltd., Johannesburg; 1931—up to date, Technical Manager, Consolidated Oil Products, Ltd., Johannesburg. (*Signed by*) E. R. Bolton.

MICHEL, FRANCIS, Luxembourg, 48, rue de l'Hippodrome (Grand-Duchy of Luxembourg). Luxembourg. Proprietor of an analytical laboratory. Doctor in chemistry of the University of Berne, Switzerland (1909). Fellow of the Société Chimique de France; the American Chemical Society and to this year of the Deutsche Chemische Gesellschaft. Author of analytical papers, patents, etc. (*Signed by*) G. T. Morgan.

OESPER, RALPH EDWARD, Department of Chemistry, University of Cincinnati, Cincinnati, Ohio, U.S.A. United States of America. Associate Professor of Analytical Chemistry. A.B., A.M., Ph.D. (University of Cincinnati). Professional training; 25 years teaching chemistry, numerous publications in the fields of organic, analytical, colloid, and historical chemistry. (*Signed by*) G. T. Morgan.

SCHIATTI, LUIGI, Film Cappelli and Ferrania, Ferrania (Savona), Italy. Italian. Managing Director of Society Film Cappelli and Ferrania. Engineer (R^o Politecnico di Milano). As I am a General Director of a company manufacturing Sensitive Products, I am desirous to enter as a fellow in the Chemical Society and therefore to receive some of its Publications. (*Signed by*) Giulio Natta.

TZCHELINZEFF, WLADIMIR W., U.S.S.R., D.Sc., Saratow University. Laboratory of Organic Chemistry. Russian. Professor of Organic Chem. at the University. Doctor of Chemistry (in Academy of Sciences). As Investigator: Theory of Grignard's reaction; (2) Obtention of individual magnesium organic compounds; (3) Oxonical compounds and their thermochemistry; (4) Tension of the high valencies of oxygen-, sulphur-, and nitrogen-organic compounds; (5) New methods of obtention of different classes of pyrrolic compounds; (6) Condensation of furanic compounds. (180 scientific investigations, eight monographs.) *Berichte, Bulletin Soc. chim., Comptes rendus, The Journal of Russ. Phys. Chem. Society, Scientif. Contributions of the University of Moscow.* (Signed by) N. S. Kurnakov.

WHEELER, ALVIN SAWYER, Chapel Hill, North Carolina, U.S.A. (University of North Carolina). American. Professor. A.B., Beloit College; A.M., Ph.D., Harvard University. (Signed by) Robert Robinson, J. C. Smith.

YOLDI, FRANCISCO, Catedrático de la Universidad, Sevilla, Spain. Spanish. Professor of Inorganic and Analytical Chemistry. Sciences Dr. by the University of Madrid. Author of the memoirs: "Valuation of Certain Metals by their Oxides" (Madrid, 1905). "On the System Lead-Silver" (*Anales Soc. Esp. Fis. y Quim.*, Madrid, 1930). Assistant Professor of Chemistry in the University of Zaragoza (1905—1912). Ordinary Professor of Inorganic and Analytical Chemistry in the University of Sevilla (since 1912). (Signed by) G. T. Morgan.

ADDITIONS TO THE LIBRARY.

I. Donations.

ZIMMER, FRITZ. Nitrocellulose ester lacquers: their composition, application and uses. Translated by H. K. CAMERON. London 1934. pp. xiv + 246. ill. 18s. net. (Recd. 8/4/35.) From the Translator.

II. By purchase.

THOMSON, JOHN. An introduction to atomic physics. London 1935. pp. x + 288. ill. 10s. 6d. net. (Recd. 21/2/35.)

UNITED STEEL COMPANIES, LTD. Standard methods of analysis of iron, steel, and ferroalloys. Sheffield 1933. pp. 35. 4s. 6d. net. (Recd. 26/2/35.)

III. Pamphlets.

AUSTRALIA, COMMONWEALTH OF. *Council for Scientific and Industrial Research*. Bulletin No. 84. The basal (standard) metabolism of the Australian merino sheep—II. By A. W. PEIRCE. Melbourne 1934. pp. 22.

— Bulletin No. 85. Studies on the phosphorus requirements of sheep. II. By H. R. MARSTON [and others]. Melbourne 1934. pp. 22. ill.

— Pamphlet No. 51. The chemistry of Australian timbers. Part 4.—A study of the lignin determination. ii. By W. E. COHEN. Melbourne 1934. pp. 20. ill.

BRITISH SCIENCE GUILD. The electron liberated: its industrial consequences. By CLIFFORD C. PATERSON. London 1935. pp. 16. ill.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 593—1935. General purpose laboratory thermometers.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Fuel Research*. Physical and chemical survey of the national coal resources, No. 35. The Yorkshire, Nottinghamshire, and Derbyshire coalfield. West Yorkshire area. The Beeston group of coals. Upper Beeston seam. Part I. London 1935. pp. vi + 103. ill.

GAADE, WILLEM. Derivaten van aethyleen-1:2-dioxaminezuur. Delft 1935. pp. 173.

INDIAN LAC RESEARCH INSTITUTE. Lac and the Indian Lac Research Institute. By DOROTHY NORRIS, P. M. GLOVER, and R. W. ALDIS. Calcutta 1934. pp. vi + 53. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Quinine manufacture in India. By GEORGE ELLIOTT SHAW. London 1935. pp. 16.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Bulletin No. 1. Tinplate and canning in Great Britain. London 1935. pp. 81. ill.

— Technical Publications. Series A. No. 7. The determination of the porosity of tin coatings on steel. By D. J. MACNAUGHTAN, S. G. CLARKE, and J. C. PRYTHERCH. pp. 9. ill.

— Series D. No. 1. A study of the yellow stain on tinplates. By C. E. BENYON and C. J. LEADBEATER. London 1935. pp. 11. ill.

LONDON SHELLAC RESEARCH BUREAU. Technical Paper No. 1. Isolation of pure lac resin. By LAL C. VERMAN and R. BHATTACHARYA. London 1934. pp. 21. ill.

MAASKANT, LEENDERT. Chloor- en broom-nitrophenyl-(methyl)hydrazinen en derivaten. Leiden 1935. pp. xii + 131.

MINES DEPARTMENT. *Safety in Mines Research Board*. Paper No. 91. A recording manometer having low inertia. By G. ALLSOP and H. LLOYD. London 1935. pp. 20. ill.

NATIONAL JOINT INDUSTRIAL COUNCIL FOR THE FLOUR MILLING INDUSTRY. Technical Education Series. Pamphlet No. 3. 2nd edition. Flour quality: its nature and control. By E. A. FISHER. London 1935. pp. 58. ill.

PACILLY, CHARLES CORNELIUS PETRUS. Inwerking van aliphatische isocyanaten op hydrazine-derivaten. Leiden 1935. pp. xii + 86.

POHLMANN, CARL WILHELM. Verdringing van de methoxy-benzoyl-groep bij de nitratie van di-methoxy-benzophenonen. Leiden 1935. pp. xii + 107.

UNITED STATES. *Department of Agriculture*. Circular No. 319. Fertilizer studies with sugar beets in the Arkansas Valley area, Colo., 1921-28. By L. A. HURST and A. W. SKUDERNA. Washington 1934. pp. 20. ill.

— — Circular No. 329. Manufacture, composition, and utilization of dairy by-products for feed. By MAYNE R. COE. Washington 1934. pp. 15. ill.

— — Technical Bulletin No. 452. Experiments with nitrogen fertilizers on cotton soils. By J. J. SKINNER [and others]. Washington 1934. pp. 28. ill.

— — Technical Bulletin No. 461. Base exchange and related properties of the colloids of soils from the erosion experiment stations. By C. S. SLATER and H. G. BYERS. Washington 1934. pp. 19.

FORTHCOMING MEETINGS OUTSIDE LONDON.*ABERDEEN.*

Friday, May 17th, 1935. Joint Scottish meeting with the Institute of Chemistry and Society of Chemical Industry in the Chemistry Department, Marischal College, University of Aberdeen, at 5.15 p.m. Dr. Ian M. Robertson of the Macaulay Institute for Soil Research will read a paper entitled "The Agricultural Utilisation of Peat Land." An informal dinner at 6.45 p.m. for 7 p.m. will be held at the Imperial Hotel (price 5s.).

Saturday, May 18th, 1935. Visit to the Macaulay Institute for Soil Research, Craigiebuckler, Aberdeen. Cars will meet at Marischal College at 10 a.m. The visit will be followed by an excursion to Deeside with lunch at Potarch Hotel and tea at Profeit's Hotel, Dinnet. Further particulars can be obtained from the Local Representative, Mr. R. Craven, B.Sc., 2, Richmondhill Gardens, Aberdeen.

CAMBRIDGE.

An Ordinary Scientific Meeting, at which the President will be in the Chair, will be held at the University Chemical Laboratory, Pembroke Street, Cambridge, at 2.30 p.m., on Saturday, May 11th, 1935.

The meeting will be followed by tea at 4.30 p.m., and visitors will be welcomed at the Chemical Laboratories afterwards. Luncheon (price 4s. inclusive) will be provided at Emmanuel College, at 1 p.m. Fellows and their guests who intend to be present at the luncheon should inform Dr. R. G. W. Norrish, Emmanuel College, Cambridge, not later than the 9th May.

FORTHCOMING MEETINGS IN LONDON.

Thursday, May 2nd, 1935, at 8 p.m.

Ordinary Scientific Meeting at which the following papers will be read :

- "Chemical constitution and the dissociation constants of monocarboxylic acids. Part III." By J. F. J. DIPPY, F. R. WILLIAMS, and (in part) R. H. LEWIS.
- "Chemical constitution and the dissociation constants of monocarboxylic acids. Part IV. A discussion of the electrolytic dissociation of substituted benzoic and phenyl-acetic acids in relation to other side-chain processes." By J. F. J. DIPPY, H. B. WATSON, and F. R. WILLIAMS.
- "Free organic radicals in the gaseous state. Part V. The reaction products of free methyl in hydrogen and helium." By F. A. PANETH, W. HOFEDITZ, and A. WUNSCH.
- "Free organic radicals in the gaseous state. Part VI. Attempts to prepare various free radicals; the existence of free benzyl." By F. A. PANETH and W. LAUTSCH.
- "The interpretation of the dissociation pressures of the palladium-hydrogen system." By M. H. HEY.

Thursday, May 16th, 1935, at 8 p.m.

Discussion on "The Significance of Phosphoric Esters in Biochemical Processes" to be opened by Professor R. Robison, D.Sc., F.R.S. Members of the Biochemical Society are invited by the Council to attend this meeting and to take part in the informal discussion.

Thursday, June 6th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Ordinary Scientific Meeting, Thursday, May 2nd, 1935, at 8 p.m., Dr. N. V. SIDGWICK, O.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 :

	Elected.	Died.
Leonard Archbutt	Feb. 21st, 1884.	April 28th.
Herbert Brereton Baker	June 9th, 1884.	April 27th.
Giuseppe G. Cristaldi	May 20th, 1926.	Dec. 20th, 1934.
Charles F. Cross	Feb. 6th, 1879.	April 15th.
William T. Gent	April 17th, 1879.	Nov. 27th, 1934.

Dr. A. Wassermann was formally admitted a Fellow of the Society.

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

Albert Ernest Alexander, B.Sc., Hightown, Ringwood, Hants.
 Edmund Jack Ambrose, 27, Rustal Road, Cambridge.
 Kenneth Drummond Anderson, B.A., B.Sc., The College, Llandovery, Carmarthen.
 Leonard Belchetz, M.Sc., Emmanuel College, Cambridge.
 Florence Ogilvy Bell, 86, Madeley Road, Ealing, W. 5.
 Gerald Lorimer Birch, Caius College, Cambridge.
 Ernest Jack Buckler, King's College, Cambridge.
 Eileen Valerie Clague, Elm Lodge, Knighton Road, Leicester.
 Arthur Thurlby Dann, M.Sc., Lister Institute, Elstree, Herts.
 Thomas Arthur Dent, La Cabane, La Rocque, Jersey.
 Frederick Charles Frank, B.A., B.Sc., 68, Walton Street, Oxford.
 Ronald George Juta Fraser, Ph.D., Laboratory of Physical Chemistry, Cambridge.
 Ernst Friedmann, Ph.D., M.D., Biochemical Institute, Cambridge.
 Walter Scott Hughes, B.S., M.Sc., 157, Huntingdon Road, Cambridge.
 Stanley Eric Janson, M.A., Ph.D., University Chemical Laboratories, Pembroke Street, Cambridge.
 James Sowden Jennings, B.Sc., 16, Stafford Road, Handsworth, Birmingham.
 Martin William Jones, B.A., Kia-Ora, Palmeira Avenue, Westcliff-on-Sea.
 Shridhar Sarvottam Joshi, Prof., D.Sc., Chemistry Department, Benares Hindu University, Benares, India.
 Raymond Mould Kelham, Nassington, near Peterborough, Northants.
 James Herbert Kemp, B.A., 84, Kingsholm Road, Gloucester.
 Harold Frederick Kenyon, B.A., St. John's College, Cambridge.
 Hans Adolf Krebs, M.A., M.D., Biochemical Laboratory, Cambridge.
 Walter McGeorge, B.Sc., A.I.C., Macleans, Ltd., Great West Road, Brentford.
 Donald Purdie, B.A., Magdalene College, Cambridge.
 John Keith Roberts, Ph.D., 27, Millington Road, Cambridge.
 James Roper Robinson, Emmanuel College, Cambridge.
 Jack Schulman, Ph.D., Trinity Hall, Cambridge.
 Delia Margaret Simpson, B.A., 10, Malpas Road, Brockley, S.E. 4.
 William Russell Addison Taylor, 82, Oswald Road, Scunthorpe, Lincs.
 Bortolo Lino Vanzetti, Prof., Dr., via Androne 25, Catania.
 John Watts Wright, 86, Grange Avenue, Oldham.

and for the second time in favour of five Candidates.

The following papers were read :

“Chemical constitution and the dissociation constants of monocarboxylic acids. Part III.” By J. F. J. DIPPY, F. R. WILLIAMS, and (in part) R. H. LEWIS.

- “Chemical constitution and the dissociation constants of monocarboxylic acids. Part IV. A discussion of the electrolytic dissociation of substituted benzoic and phenylacetic acids in relation to other side-chain processes.” By J. F. J. DIPPY, H. B. WATSON, and F. R. WILLIAMS.
- “Free organic radicals in the gaseous state. Part V. The reaction products of free methyl in hydrogen and helium.” By F. A. PANETH, W. HOFEDITZ, and A. WUNSCH.
- “Free organic radicals in the gaseous state. Part VI. Attempts to prepare various free radicals; the existence of free benzyl.” By F. A. PANETH and W. LAUTSCH.

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

Adrien Albert, B.Sc.	Chi-Ming Ma, B.Sc.
Herbert Hans Karl August Appel, Dr.phil.	Leopold Mandelstam, M.Sc.
John George Mackay Bremner, B.A., B.Sc.	Standish Masterman, B.Sc.
Charles William Arnold Brown, B.Sc., M.Sc.	May Mawson, M.Sc., A.R.C.S.
Frederick Charles Brown, B.Sc.	Francis Michel, D.Sc.
Wallace H. Carothers, M.S., Ph.D.	Susumu Nukada.
Reginald Langham Elliott, B.Sc.	Ralph Edward Oesper, A.M., Ph.D.
Edward Henry Ellis, B.Sc.	Alexander George Ogston, B.A.
Mohammad Omar Farooq, M.Sc., Ph.D.	Peter William Reynolds, B.A.
John Field, B.A.	Luigi Schiatti.
Walter Fletcher.	Ernesto Seijo.
Ronald Arthur Powell Guest, B.A.	Leonard Hart Smith, M.Sc.
Edgar Augustus Harlow.	Edwin Thompson, J.P.
Claude Hurst, M.A., D.Phil.	Wladimir W. Tzchelinzeff, D.Sc.
Robert Salmon Hutton, M.A., D.Sc.	Edward Jervis Vickers, B.A.
Alan James Martin Jenner, B.A.	Alvin Sawyer Wheeler, A.M., Ph.D.
Eric Ian Johnson, M.Sc.	Stanley Wilkinson.
Richard Norman Jones, M.Sc.	Stephen Esslemont Woods, B.A., B.Sc.
Shri Krishna, D.Sc., Ph.D.	Francisco Yoldi, D.Sc.

Extraordinary General Meeting, Thursday, May 9th, 1935, at 5.30 p.m.

DR. N. V. SIDGWICK, O.B.E., M.A., D.Sc., F.R.S., President, was in the Chair. 49 Fellows were present.

The notice convening the meeting was read.

After some introductory remarks, the PRESIDENT called upon Mr. J. Davidson Pratt to explain the main points of the scheme of co-operation between the Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry as set forth in the proposed agreement sent to Fellows on March 21st.

It was stated that 24 Fellows had replied to the President's letter of March 21st, of whom 22 were in favour of the scheme of co-operation and 2 against. Two of these letters (one for and one against) were read, and a letter from Professor M. W. Travers was also read at his request. Fellows were then invited to express their views for the guidance of the Council. Various points raised by Fellows were discussed, and it was moved from the Chair "That this meeting records its approval of the proposed Agreement." This resolution was carried nem. con., and the President agreed to report accordingly to Council.

Ordinary Scientific Meeting held at the University Chemical Laboratory, Cambridge, on Saturday, May 11th, 1935, at 2.30 p.m.

The PRESIDENT, Dr. N. V. Sidgwick, O.B.E., M.A., D.Sc., F.R.S., was in the Chair.

The PRESIDENT welcomed the visitors present and referred to the presence of Sir Frederick Gowland Hopkins, Pres.R.S.

The following were formally admitted Fellows of the Society: Rex R. Cawthorne, Laurence E. Price, Ewart I. Akeroyd, Kenneth C. Webster, John E. Carruthers, and Sir Frederick Gowland Hopkins.

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

Francis William Aston, M.A., Sc.D., LL.D., D.Sc., F.R.S., Trinity College, Cambridge.
 Donald George Giles, St. Peter's Hall, Oxford.
 John Richardson Marrack, M.A., M.D., 18, Warwick Road, Bishops Stortford.
 Temple Clifford John Ovenston, Ph.D., A.I.C., 123, Devonshire Avenue, Southsea, Hants.
 Gerard Lionel Ransome, B.Sc., Holyrood, Beatrice Avenue, Felixstowe.

and for the second time in favour of 31 candidates.

The following papers were read :

“Leuco-anthocyanins.” By (MRS.) G. M. ROBINSON and R. ROBINSON.
 “The planar configuration for quadricovalent nickel, palladium, and platinum.” By
 E. G. COX, F. W. PINKARD, W. WARDLAW, and K. C. WEBSTER.
 “The catalytic effect of hydrogen on the carbon-monoxide flame.” By W. E. GARNER
 and F. H. POLLARD.

It was announced that after tea in the Perse Room the Laboratories would be open for inspection and that Prof. T. M. Lowry would demonstrate “Reaction waves in the mutual reduction of ozone and nitrogen pentoxide.”

Ordinary Scientific Meeting, Thursday, May 16th, 1935, at 8 p.m., DR. N. V. SIDGWICK, O.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

The PRESIDENT referred to the death on May 6th of Sir James Walker, who was elected a Fellow in 1890. He also stated that at the Council meeting held in the afternoon the deaths of Professor H. B. Baker and Sir James Walker had been announced and that the following resolutions had been passed :

“The President, Council, and Fellows of the Chemical Society express their deep sorrow at the death of their Past President, Professor Herbert Brereton Baker, who during the 51 years he was a Fellow served on the Council for a period of fifteen years. They remember with gratitude his devotion to the Society, and record their high appreciation of the conspicuous services he rendered to the science of chemistry by his brilliant researches on the inactivity of dry gases and in other fields of inorganic chemistry.

“They mourn the loss of a distinguished colleague, and desire to convey their sincere sympathy to Mrs. Brereton Baker and her daughter in their bereavement.”

“The President, Council, and Fellows of the Chemical Society express their deep sorrow at the death of Sir James Walker, who during the 45 years he was a Fellow served the Society as an Ordinary Member of Council, as Vice-President and as President for a period of nineteen years in all. They remember with gratitude his devoted services to the Society and express their high appreciation of his pioneer researches in the domain of physical chemistry. These will ever assure him an eminent position among Chemists throughout the world.

“They mourn the loss of a distinguished colleague and desire to convey their sincere sympathy to Lady Walker and her son in their bereavement.”

Those present stood when these resolutions were read.

It was announced that :

1. The following Committees for 1935–1936 had been appointed by the Council :

Finance and General Purposes Committee.

E. F. Armstrong, W. A. S. Calder, F. P. Dunn, C. S. Gibson, G. T. Moody, G. T. Morgan, Sir William J. Pope, Sir Robert Robertson, the Officers, and the Chairman of the Library Committee and of the Publication Committee. The President as Chairman, Treasurer as Vice-Chairman, and the Assistant Secretary as Secretary.

Library Committee.

H. Bassett, O. L. Brady (Chairman), G. I. Finch, C. K. Ingold, W. H. Mills, B. Topley, E. E. Turner, J. C. Withers, and the Officers, together with representatives of contributing Societies, with the Librarian as Secretary.

Publication Committee.

H. E. Armstrong, H. W. Dudley, F. P. Dunn, G. I. Finch, J. J. Fox, W. E. Garner, C. R. Harington, I. M. Heilbron, T. P. Hilditch, C. N. Hinshelwood, E. L. Hirst, C. K. Ingold, J. Kendall, J. Kenner, R. P. Linstead, T. M. Lowry, T. S. Moore (Chairman), R. G. W. Norrish, J. R. Partington, E. K. Rideal, F. M. Rowe, T. W. J. Taylor, J. F. Thorpe, E. E. Turner, W. Wardlaw, H. B. Watson, J. H. Wolfenden and the Officers, with the Editor as Secretary.

Research Fund Committee.

F. E. Francis, W. N. Haworth, J. Kendall, T. M. Lowry, J. R. Partington, J. C. Philip, R. Robinson, J. F. Thorpe, R. Whytlaw-Gray, and the Officers. The President as Chairman and the Assistant Secretary as Secretary.

2. Mr. W. R. Criper had sent a Jubilee Donation of £25 to the Publications Fund.

Messrs. C. J. O. R. Morris and E. H. T. Jukes were formally admitted Fellows of the Society.

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

Ronald Cedric Amsden, Woodberry, Pilgrim's Way, Reigate.
 Otilie Blum-Bergmann, Mrs., Ph.D., P.O. Box 26, Rehovot, Palestine.
 Leon Haskelberg, D.-ès-Sc., P.O. Box 26, Rehovot, Palestine.
 Joseph Alfred Kitchener, 34, Ravenslea Road, Balham, S.W.12.
 Bruce Ashley Stephens, Wentworth, Beech Hill, Hadley Wood, Herts.

The following forms of recommendation for Fellowship have been accepted by the Council under Bye-Law I (2) :

Robert Redvers Follett-Smith, B.Sc., Department of Agriculture, Georgetown, British Guiana.
 Jamiat Vishindas Lakhani, Prof., M.Sc., Ph.D., D.J.Sind College, Karachi, India.
 Gordon R. Maybee, B.A., B.Sc., 3727, de l'Oratoire Avenue, Montreal, Quebec.

Forms of Recommendation for Fellowship were read for the second time in favour of five Candidates.

A Discussion on "The Significance of Phosphoric Esters in Biochemical Processes" was opened by Professor R. Robison, and continued by Dr. P. Eggleton, Dr. W. T. J. Morgan, Professor H. D. Kay, Professor A. Harden, and Dr. G. A. Grant.

**REPORT OF INTERNATIONAL CONFERENCE ON PHYSICS AND REPORTS ON
 PROGRESS IN PHYSICS ISSUED BY THE PHYSICAL SOCIETY.**

The Physical Society has recently published a Report of the International Conference on Atomic Physics held in London in October 1934. The Report is published in three sections: (a) Nuclear Physics, (b) The Solid State of Matter, and (c) Report of the Commission on Symbols, Units, and Nomenclature. It has also published the first of an annual series of Progress Reports on Physics. This volume endeavours to present to the Physicist, who is not necessarily a specialist in any particular branch, a critical and detailed account of recent advances in physics up to the end of 1933.

Further particulars of these publications can be obtained from the Secretary of the Physical Society, 1, Lowther Gardens, South Kensington, S.W. 7.

**FOURTH INTERNATIONAL TECHNICAL AND CHEMICAL CONGRESS OF THE
AGRICULTURAL INDUSTRIES.**

The Fourth International Technical and Chemical Congress of the Agricultural Industries will be held at Brussels from July 15th to 28th, 1935, under the exalted patronage of H.M. The King of the Belgians.

The work of the Congress will be divided into four divisions :

I. General Scientific Studies, including the study of the vitamins and of methods of analysis.

II. Agronomic Studies, including the selection of plants and raw materials of the food-stuff industries; Agrology; use of fertilisers, sickness and enemies of plants, cultivation of indigenous and tropical plants used in industry.

III. Industrial Studies, including manufacture and refining of sugar, invert sugar and organic derivatives of sugar. Fermentation Industries, including distillation of alcohol and other products, Oenologie, malting and brewing, manufacture of cider, fruit wine and vinegar. Foodstuff Industries, including milling, baking, manufacture of semolina and food pastes, fecula, starch and glucose manufacture, dairy, butter and cheese products, chocolate, biscuit and confectionery manufacture, fatty materials, preserved foodstuffs, manufacture of jam and syrup, and preserving the fruits, tobacco and cellulose.

IV. Economic Studies, including statistics, distribution of food products, and propaganda to increase consumption of foodstuffs.

The Congress will include general meetings, sectional meetings, conferences, practical demonstrations, visits of scientific and industrial interest, and excursions.

Copies of the programme containing particulars of the Congress can be obtained from Mr. W. E. Callingham, Thames House, Queen Street Place, E.C.4, or from the General Secretary of the Congress, 133, Chaussee de Charleroi, Brussels.

List of Papers, or Abstracts thereof, received between April 11th and May 16th, 1935. (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.)

- “Experiments on the synthesis of physostigmine (eserine). Part XI. The later phases of the synthetical investigations.” By F. E. KING and R. ROBINSON.
- “The spectrum, fluorescence, and photochemical decomposition of acraldehyde.” By H. W. THOMPSON and J. W. LINNETT.
- “The kinetics of the thermal decomposition of acraldehyde.” By H. W. THOMPSON and J. J. FREWING.
- “Electrometric studies of the precipitation of hydroxides. Part XII. The constitution of aqueous solutions of silver oxide in ammonia, mono-, di-, and tri-methylamine and ethylamine, pyridine, and ethylenediamine, with a note on the dissociation constants of the substituted ammonias.” By H. T. S. BRITTON and W. G. WILLIAMS.
- “Physico-chemical studies of complex formation involving weak acids. Part XIV. Complex formation between malonates of the heavy metals and sodium.” By H. T. S. BRITTON and M. E. D. JARRATT.
- “The dipole moments of 1 : 4-dinitro-, 1 : 3 : 5-trinitro-, and certain 2 : 4 : 6-trisubstituted-1 : 3 : 5-trinitro-benzenes.” By (Mrs.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.
- “On the equilibrium and the heat of the reaction $C_2H_4 + H_2 = C_2H_6$.” By E. TELLER and B. TOPLEY.
- “The constitution of sulpharsphenamine. Part II. A new interpretation.” By W. J. C. DYKE and H. KING.
- “Canavanine.” By J. M. GULLAND and C. J. O. R. MORRIS.
- “Synthetic uses of *as*-octahydrophenanthrene. Part I.” By J. W. COOK and G. A. D. HASLEWOOD.
- “A convenient synthesis of cholanthrene.” By J. W. COOK and G. A. D. HASLEWOOD.

- "The surface tensions and partial vapour pressures of aqueous aniline solutions." By J. C. SPEAKMAN.
- "The dialkyl disulphides." By J. GRAYMORE.
- "Complexes of polynitro-compounds. Part I. Derivatives of some polynitro-hydrocarbons with 1-keto-1 : 2 : 3 : 4-tetrahydrocarbazole." By A. KENT.
- "Rhodium hydroxopentammines." By B. E. DIXON.
- "Dicyclic derivatives of simple aliphatic ketones." By F. E. KING.
- "Preparation of anhydrous chlorides and metallic couples." By S. D. NICHOLAS.
- "The association of water and deuterium oxide in dioxan solution." By R. P. BELL and J. H. WOLFENDEN.
- "Electrometric studies of the precipitation of hydroxides. Part XIII. The reactions between silver nitrate and methylamine, mono-, di-, and tri-ethylamine, ethylenediamine, aniline, and pyridine in solution." By H. T. S. BRITTON and W. G. WILLIAMS.
- "Kinetics of the thermal decomposition of methylamine." By H. J. EMELÉUS and L. J. JOLLEY.
- "Organic compounds of gold. Part V. Cyano-compounds. Preliminary experiments on the production of alkyl radicals." By A. BURAWOY, C. S. GIBSON, and (in part) S. HOLT.
- "The rearrangement of *ortho*-hydroxysulphones. Part V." By F. GALBRAITH and S. SMILES.
- " β -Hydroxyethyl ethers of substituted phenols and related substances." By D. C. MOTWANI and T. S. WHEELER.
- "Validity of Holden and Lapworth's theory of the mechanism of abnormal Michael additions." By C. K. INGOLD.
- "Studies in the anthracene series. Part X." By E. DE B. BARNETT, N. F. GOODWAY, and E. V. WEEKS.
- "The derivatives of the dipolymethyleno- and tetrapolymethyleno-anthracenes. Part I." By E. DE B. BARNETT and C. A. LAWRENCE.
- "The nature of the ceric sulphates." By E. G. JONES and F. G. SOPER.
- "The supposed isolation of a second form of $\beta\beta$ -dimethylcyclohexanone. Ring rearrangement during Clemmensen reduction." By A. N. DEY and R. P. LINSTEAD.
- "Fused carbon rings. Part V. Methods for the synthesis of reduced dicyclic systems." By J. W. BARRETT, A. H. COOK, and R. P. LINSTEAD.
- "Fused carbon rings. Part VI. Optical activity connected with the presence of multipolar rings." By J. W. BARRETT and R. P. LINSTEAD.
- "Walden inversion reactions of *d*- β -butyl, *d*- β -octyl, and *d*-benzylmethylcarbinyl *p*-toluenesulphonates." By J. KENYON, H. PHILLIPS, and (Miss) V. P. PITTMAN.
- "Reactions of *o*-hydroxybenzylidenediacetophenones. Part IV. Unsymmetrical 1 : 5-diketones." By D. W. HILL.
- "Reactions of *o*-hydroxybenzylidenediacetophenones. Part V. Functional group reactions of salicylidenediacetophenones." By A. G. GOMM and D. W. HILL.
- "The relation between general absorption and residual affinity. Heterocyclic compounds." By J. HOUSTON, G. CANNING, and H. GRAHAM.
- "A reaction of certain diazosulphonates derived from β -naphthol-1-sulphonic acid. Part XII. Preparation of phthalazine, phthalazone, and phthalimidine derivatives from 2-bromo-4-nitroaniline." By F. M. ROWE, G. B. JAMBUSERWALA, and H. W. PARTRIDGE.
- "The structure of glutaryl chloride." By S. G. P. PLANT and (Miss) M. E. TOMLINSON.
- "The configuration of the valencies of 4-covalent platinum. The optical resolution of mesostilbene diaminoisobutylene diamino platinumous salts." By W. H. MILLS and T. H. H. QUIBELL.
- "Organic derivatives of silicon. Part XLIX. The reduction of the tetranitrotetra-phenylsilicanes." By S. F. KIPPING and J. C. BLACKBURN.
- "Organic derivatives of silicon. Part L. The nitration of phenyltriethyl-, diphenyldiethyl-, and triphenylethyl-silicane." By F. S. KIPPING and N. W. CUSA.

- “The constitution of vasicin.” By H. R. JUNEJA, K. S. NARANG, and J. N. RĀY.
 “The determination of the parachors of solids in solution, and their constitution. Part I. Inorganic salts in water.” By J. V. LAKHANI and R. P. DAROGA.

FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, JUNE 6th, 1935.

ALEXANDER, ALBERT ERNEST, Hightown, Ringwood, Hants. British. Student. B.Sc., Reading University. Date of birth Jan. 5th, 1914. (*Signed by*) R. G. W. Norrish, W. H. Mills, F. P. Bowden.

AMBROSE, EDMUND JACK, 27, Rustal Road, Cambridge. English. Student. Candidate for B.A. (Cambridge), June 1935. Intending Research Student at Cambridge. Date of birth March 2nd, 1914. (*Signed by*) R. G. W. Norrish, W. H. Mills, F. P. Bowden.

ANDERSON, KENNETH DRUMMOND, The College, Llandoverly, Carmarthen, S. Wales. British. Schoolmaster. B.A., B.Sc., Oxford. To receive the Journals and to use the Society's Library. Anderson and Hammick, “The Kinetics of the Depolymerisation of Bimolecular Nitrosoisopropylacetone,” *J.C.S.*, 1935, 30. (*Signed by*) D. I. Hammick, F. E. King, L. O. Newton.

ASTON, FRANCIS WILLIAM, Trinity College, Cambridge. British. M.A., Sc.D. (Cantab.), D.Sc., Hon. LL.D. (Birm.), D.Sc. (Dub.), Hon. Ph.D. (Freiburg), F.R.S., Nobel Laureate, 1922. *J.C.S.*, 1901, 79, 511; 1919, 115, 472; Liversidge Lecture, 1932; *Ann. Rep.*, 19, 21, 23. (*Signed by*) H. McCombie, W. J. Pope, R. G. W. Norrish, N. V. Sidgwick, J. Masson Gulland.

BELCHETZ, LEONARD, Emmanuel College, Cambridge. British. Student (Research). M.Sc. (University of South Africa). Publications in *Journ. of Soc. for Advancement of Science* (S.A.); *Trans. Faraday Soc.*, 1934, 30, 170. Publication in *J. Amer. Chem. Soc.* pending. (*Signed by*) R. G. W. Norrish, W. H. Mills, J. E. Lennard-Jones.

BELL, FLORENCE OGILVY, 86, Madeley Road, Ealing, W. 5. British. Student at Cambridge University. Date of birth May 1st, 1913. (*Signed by*) F. G. Mann, R. G. W. Norrish, F. P. Bowden.

BIRCH, GERALD LORIMER, Caius College, Cambridge. British. Student. (*Signed by*) F. G. Mann, R. G. W. Norrish, F. P. Bowden, H. McCombie.

BUCKLER, ERNEST JACK, King's College, Cambridge. British. Student (intending research in July). Scholar of King's College, Cambridge, State Scholar. Date of birth June 3rd, 1914. (*Signed by*) R. G. W. Norrish, W. H. Mills, F. P. Bowden.

CLAGUE, EILEEN VALERIE, Elm Lodge, Knighton Road, Leicester. British. Student. Date of birth Feb. 2nd, 1913. (*Signed by*) F. G. Mann, R. G. W. Norrish, F. P. Bowden.

DANN, ARTHUR THURLBY, Lister Institute, Elstree, Herts. British. Chemist. M.Sc., Melbourne. Assistant Research Officer of the Council for Scientific and Industrial Research, Commonwealth of Australia. With A. Howard and W. Davies, *J.C.S.*, 1928, p. 605; with W. Davies, *J.C.S.*, 1929, p. 1050; 1929, p. 2460; with W. Davies, etc., *J.C.S.*, 1933, p. 15. (*Signed by*) W. Davies, E. J. Hartung, Walter T. J. Morgan, A. C. D. Rivett.

DENT, THOMAS ARTHUR, La Cabane, La Rocque, Jersey. British. Student. Date of birth July 4th, 1913. (*Signed by*) F. G. Mann, R. G. W. Norrish, H. McCombie.

FRANK, FREDERICK CHARLES, 68, Walton Street, Oxford. British. Research Student. B.A., B.Sc. (Oxford). Date of birth March 6th, 1911. (*Signed by*) D. I. Hammick, N. V. Sidgwick, R. Branston Williams.

FRASER, RONALD GEORGE JUTA, Laboratory of Physical Chemistry, Cambridge. British. Research Physicist. B.Sc., Ph.D. (Aberdeen). 1924–26, Assistant in Natural Philosophy, University of Aberdeen; 1926–29, Senior 1851 Exhibitioner, Physikalisch-Chemisches Institut, Hamburg; 1929–35, Technical Assistant, Imperial Chemical Industries, Ltd. (*Signed by*) R. G. W. Norrish, W. H. Mills, J. E. Lennard-Jones.

FRIEDMANN, ERNEST, Biochemical Institute, Cambridge. German. Research worker. Ph.D., M.D. Formerly Professor of Biochemistry at the University of Berlin and at Moscow. Several publications in the *Biochem. Z.*, *Helv. Chim. Acta*, etc. (*Signed by*) F. G. Mann, R. G. W. Norrish, H. McCombie.

GILES, DONALD GEORGE, St. Peter's Hall, Oxford. British. Undergraduate of Oxford University. Desirous of keeping in touch with modern developments. Date of birth July 15th, 1915. (*Signed by*) B. K. Blount, T. W. J. Taylor, E. Hope.

HUGHES, WALTER SCOTT, 157, Huntingdon Road, Cambridge. U.S.A. Chemist. B.S., Mass. Inst. of Tech.; M.Sc., Cambridge. *J.C.S.*, 1928, p. 491, "On Haber's Glass Cell." (*Signed by*) R. G. W. Norrish, J. B. Whitworth, H. McCombie.

JANSON, STANLEY ERIC, University Chemical Laboratories, Pembroke Street, Cambridge. British. Research Chemist. M.A., Ph.D. (Cantab.); B.Sc. (London). Assistant to Professor of Chemistry, University of Cambridge. (*Signed by*) P. Maitland, W. H. Mills, R. G. W. Norrish.

JENNINGS, JAMES SOWDEN, 16, Stafford Road, Handsworth, Birmingham 21. British Subject. Lecturer (Technical College, Handsworth). B.Sc., Leeds (1923). Trained Certificate Teacher (1921). County School, Helston, 1921-27 (Secondary). County School, Saltash, 1927-31 (Secondary). Handsworth Technical College, 1931-present post, and research at Birmingham University. (*Signed by*) Wm. Wardlaw, F. W. Pinkard, E. G. Cox, E. Sharratt.

JEWELL, JOHN CHRISTOPHER, 50, Cyril Mansions, Battersea Park, S.W. 11. British. Chemist. A.R.C.S., B.Sc., London. Research Assistant at the Imperial College Biological Field Station, Slough, Bucks. Date of birth June 9th, 1912. (*Signed by*) R. H. Purcell, Thomas G. Pearson, H. N. Rydon.

JONES, MARTIN WILLIAM, "Kia-ora," Palmeira Avenue, Westcliff-on-Sea, Essex. British. Technical Expert Gas Light & Coke Co. B.A. (Oxford). Honour School of Natural Science, Class II. One year's research on "Preparation and Properties of Nickel Organosols by Decomposition of Nickel Carbonyl" (not published). At present engaged in development of coke-fired automatically fed boilers, and the thermostatic control of these. Date of birth June 17th, 1911. (*Signed by*) H. J. George, H. Hollings, Fred. C. Smith.

JOSHI, SHRIDHAR SARVOTTAM, Chemistry Department, Benares Hindu University, Benares, India. Indian. University Professor of Chemistry. M.Sc. (Benares); D.Sc. (London). (1) Have been doing research work in Physical Chemistry since 1921, (2) author of numerous papers; (3) have been Professor of Chemistry at Benares since 1928. (*Signed by*) F. G. Donnan, R. Winstanley Lunt, Henry Terrey.

KELHAM, RAYMOND MOULD, Nassington, nr. Peterborough, Northants. British. Student. 1st Class Natural Science Tripos, Part I. Date of birth Feb. 3rd, 1913. (*Signed by*) F. G. Mann, R. G. W. Norrish, H. McCombie.

KEMP, JAMES HERBERT, 84, Kingsholm Road, Gloucester. British. Research. B.A., Cambridge. Date of birth March 31st, 1912. (*Signed by*) R. G. W. Norrish, W. H. Mills, F. P. Bowden.

KENYON, HAROLD FREDERICK, St. John's College, Cambridge. British. Research Student. B.A. (Cantab.). Date of birth May 7th, 1911. (*Signed by*) F. G. Mann, R. G. W. Norrish, F. P. Bowden.

KREBS, HANS ADOLF, Biochemical Laboratory, Cambridge. German. Demonstrator in Biochemistry. M.A. (Cantab.); M.D. (Hamburg). Publications in *Biochem. Z.*, *Zeits. physiol. Chem.* (*Signed by*) F. G. Mann, R. G. W. Norrish, F. B. Kipping.

McGEORGE, WALTER, Macleans, Ltd., Great West Road, Brentford, Middlesex. British. Chemist. B.Sc. (Glasgow), A.I.C., A.R.T.C. (*Signed by*) Thomas McLachlan, M. S. Smith, J. A. C. Flohren.

MARRACK, JOHN RICHARDSON, 18, Warwick Road, Bishops Stortford. English. Teacher of Chemical Pathology. M.A., M.D., Cambridge. Professor of Chemical Pathology of London University. Author of "Chemistry of Antigens and Antibodies," M.R.C. Special Report 194. Author of Chemical Section (Panton and Marrack) Clinical Pathology. Various papers in *Biochem. J.* and *British Journal of Experimental Pathology*. (*Signed by*) A. C. Chibnall, Leslie J. Harris, Katharine H. Coward.

OVENSTON, TEMPLE CLIFFORD JOHN, 123, Devonshire Avenue, Southsea, Hants. British. Analyst, Civil Service. Ph.D. (Lond.); B.Sc. (Lond.); A.I.C. Ph.D. Thesis (1932) "Heats of Formation and Velocities of Transformation of Isomeric Cobaltamines." Since 1932, engaged in analytical and investigational work in Dept. of Admiralty Chemist, Portsmouth. (*Signed by*) Henry Terrey, L. F. Gilbert, C. F. Goodeve.

PURDIE, DONALD, Magdalene College, Cambridge, England. British. Research Chemist. B.A. (Cantab.). 1st Class Natural Science Tripos, Part II (Chemistry), Cambridge. Engaged in Research on Co-ordination Compounds in the University Chemical Laboratory. (*Signed by*) R. G. W. Norrish, W. H. Mills, T. M. Lowry.

RANSOME, GERARD LIONEL, Holyrood, Beatrice Avenue, Felixstowe, Suffolk. British. Analytical Chemist. B.Sc. (London external, from University College, Nottingham). Analytical and Consulting Chemist. (*Signed by*) F. S. Kipping, E. B. R. Prideaux, F. C. Laxton, J. B. Firth, H. H. Barber, B. D. Shaw.

ROBERTS, JOHN KEITH, 27, Millington Road, Cambridge. British. Demonstrator in Department of Colloid Science. Ph.D. (Cambridge). Various publications in *Proc. Roy. Soc.* (*Signed by*) R. G. W. Norrish, W. H. Mills, J. E. Lennard-Jones.

ROBINSON, JAMES ROPER, Emmanuel College, Cambridge. British. Student. Nat. Sci. Tripos, Part I, Class I (Cambridge). Date of birth June 4th, 1914. (*Signed by*) R. G. W. Norrish, F. G. Mann, H. McCombie.

RONAASEN, KNUT, c/o P.O., N'Kana, Northern Rhodesia, Africa. Norwegian. Junior Chemist. B.Sc. in Applied and Industrial Chemistry, University of Cape Town. I wish to receive the *Journal of the Chemical Society*, the *British Chemical Abstracts "A"* (Pure Chemistry), to purchase the *Annual Reports on the Progress of Chemistry*, and to keep in touch with the advances in Analytical Chemistry. (*Signed by*) E. Newbery, L. N. Cohen, J. Smeath Thomas.

SCHULMAN, JACK, Trinity Hall, Cambridge. British. Medical Research. Dipl. Ing. Chem. (Zurich); Ph.D. (Cantab.). Several publications in *Proc. Roy. Soc. (A.)* and *Biochem. J.* (*Signed by*) R. G. W. Norrish, W. H. Mills, J. E. Lennard-Jones.

SIMPSON, DELIA MARGARET, 10, Malpas Road, Brockley, S.E. 4. British. Student (Research). B.A., Cambridge. Nat. Science Tripos, Part II (Chemistry). Date of birth Feb. 5th, 1912. (*Signed by*) R. G. W. Norrish, W. H. Mills, J. E. Lennard-Jones.

TAYLOR, WILLIAM RUSSELL ADDISON, 82, Oswald Road, Scunthorpe, Lincs. British. Student. 2nd Class Natural Science Tripos, Part I. Date of birth Sept. 13th, 1912. (*Signed by*) R. G. W. Norrish, F. G. Mann, H. McCombie.

THORNTON, JAMES COWARD, 10, De Montfort Street, Leicester. English. Works Chemist. Holder of the National Certificate in Chemistry, and completed course of Higher Nat. Cert. in Chem. Employed for 7 years and 8 months at Messrs. I.C.I. (Gen. Chem.), Fleetwood, covering a wide and varied field, both in the laboratory and on the works. At present employed as Analytical and Manufacturing Chemist in Leicester. Date of birth Dec. 5th, 1911. (*Signed by*) Ernest Taylor, S. Travis Tong, J. N. Aldington.

VANZETTI, BORTOLO LINO, Catania, via Androne 25. Italian. Ord. Professor of General Chemistry. Dr. in Chemistry, Padua University. Director of the Institute of General Chemistry in the University of Catania (Sicilia), and President of the School of Pharmacy. (*Signed by*) S. Sugden, N. V. Sidgwick, H. J. T. Ellingham.

WRIGHT, JOHN WATTS, 86, Grange Avenue, Oldham. British. Student. (*Signed by*) F. G. Mann, R. G. W. Norrish, F. P. Bowden.

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

MILLER, JAMES RAEBURN, 314A, Pitt Street, Sydney, Australia. British. Chemist. Ph.C. (New Zealand University). Diploma, Organic, Inorganic, and Analytical Chemistry, Southland Technical College, New Zealand. Chief Chemist to Southland Hospital Board, New Zealand. Member Pharmaceutical Society of New South Wales. Member Pharmaceutical Society of New Zealand. Lecturer in Chemistry and Pharmacy, Southland Hospital, 1920-24. (*Signed by*) George Z. Dupain, N. V. Sidgwick.

TIN, MAUNG, 48, Stewart Road, Rangoon Cantonment, Burma. Burmese. M.R.C.S. (Eng.); L.R.C.P. (Lond.). Assistant Chemical Examiner to the Government of Burma since 1926. (*Signed by*) N. V. Sidgwick, M. C. Thoung.

ADDITIONS TO LIBRARY

I. *Donations*

COLD SPRING HARBOR. *Biological Laboratory*. Symposia on quantitative biology. Vol. I. Cold Spring Harbor 1933. pp. xii + 239. ill. (*Reference.*) From the Bureau of Chemical Abstracts.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Chromium steels. By RICHARD HENRY GREAVES. London 1935. pp. vi + 321. ill. 7s. 6d. net. (*Recd.* 15/4/35.)

From the Director.

LOWRY, THOMAS MARTIN. Optical rotatory power. London 1935. pp. xiv + 483. ill. 30s. net. (*Recd.* 2/5/35.) From the Author.

OFFICE INTERNATIONAL DE CHIMIE. Répertoire international des centres de documentation chimique. Paris [1935]. pp. 115. (*Reference.*) From the Director.

PILCHER, RICHARD BERTRAM. The profession of chemistry. 3rd edition. London 1935. pp. viii + 104. 2s. 6d. net. (*Recd.* 14/5/35.) From the Institute of Chemistry.

TAYLOR, FRANK SHERWOOD. Inorganic and theoretical chemistry. 3rd edition. London 1935. pp. xiv + 832. ill. 12s. 6d. net. (*Recd.* 14/5/35.) From the Publishers: Messrs. William Heinemann.

II. *By purchase.*

COWGILL, GEORGE R. The vitamin B requirement of man. New Haven 1934. pp. xx + 261. ill. 18s. net. (*Recd.* 16/5/35.)

FARKAS, ADALBERT. Orthohydrogen, parahydrogen and heavy hydrogen. Cambridge 1935. pp. xiv + 215. ill. 12s. 6d. net. (*Recd.* 16/5/35.)

FRANKLIN, EDWARD CURTIS. The nitrogen system of compounds. (American Chemical Society Monograph Series.) New York 1935. pp. 339. ill. \$7.50. (*Recd.* 16/5/35.)

HALDANE, JOHN SCOTT, and GRAHAM, JOSEPH IVON. Methods of air analysis. 4th

edition. London 1935. pp. viii + 176. ill. 7s. 6d. net. (*Recd.* 16/5/35.)

MOORE, HAROLD. Liquid fuels: their manufacture, properties, utilisation, and analysis. London 1935. pp. viii + 264. ill. 21s. net. (*Recd.* 16/5/35.)

PARRY, ERNEST JOHN. Shellac: its production, manufacture, chemistry, analysis, commerce and uses. London 1935. pp. xii + 24. ill. 12s. 6d. net. (*Recd.* 16/5/35.)

RICE, F. O., and RICE, K. K. The aliphatic free radicals. Baltimore 1935. pp. 204. ill. \$4.50. (*Recd.* 16/5/35.)

III. *Pamphlets.*

AUSTRALIA, COMMONWEALTH OF. *Council for Scientific and Industrial Research*. Bulletin No. 86. A soil survey of the Berri, Cobdogla, Kingston, and Moorbrook irrigation areas, and the Lyrup village district, South Australia. By T. J. MARSHALL and P. D. HOOPER. Melbourne 1935. pp. 55. ill.

——— Pamphlet No. 53. The identification of wood by chemical means. Part II. By W. E. COHEN. Melbourne 1935. pp. 23.

[FORBES, R. J.] The story of bitumen from the earliest times up to the nineteenth century. [1935.] pp. 63. ill.

HERZOG, RUDOLF. Etude chimique et physiologique des amines à fonction éthylénique et des diamines. Soleure 1934. pp. 44.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Fifty years of chemistry, 1885-1935. By ARTHUR E. EVEREST. London 1935. pp. 20.

SEVAUX, ALFRED. L'action élective des dérivés polyarsénicaux sur la trypanosomose expérimentale a *Trypanosoma congolense*. Paris 1935. pp. 111.

SIVADJIAN, J. Contribution a l'étude des médicaments antithermiques. Paris 1935. pp. 96. ill.

FORTHCOMING MEETING IN LONDON.

Thursday, June 6th, 1935, at 8 p.m.

Ordinary Scientific Meeting, at which a ballot for the election of Fellows will take place.

The following papers will be read :

- “ The interpretation of the dissociation pressures of the palladium-hydrogen system.”
By M. H. HEY.
- “ The stereochemical relationships of some optically active amines and amino-acids.
Part I. The configuration of valine.” By F. BARROW and G. W. FERGUSON.
- “ The preparation of organic compounds containing deuterium. Dideuteromalonic deuter-
acid and trideuteracetic deuteracid.” By C. L. WILSON.
- “ Experiments on deuterobenzene. Part I.” By G. R. CLEMS and A. MCQUILLAN.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

A joint meeting with the University College of Swansea Chemical Society was held on Thursday, March 21st, 1935, at 6 p.m., at the University College, Swansea, Mr. J. H. Beynon, B.Sc., President of the College Chemical Society, in the Chair. Dr. N. V. Sidgwick, C.B.E., F.R.S., delivered a lecture on "Recent Work on Molecular Structure." The lecture was followed by a discussion, and a vote of thanks to Dr. Sidgwick, proposed by Mr. E. E. Ayling, and seconded by Mr. G. O. Richards, was carried with acclamation.

The Scottish joint meeting of the Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry was held on Friday, May 17th, 1935, in the Chemistry Department of Marischal College, Aberdeen, the Chair being taken by Professor Alexander Findlay, D.Sc., F.I.C. A paper, entitled "The Agricultural Utilisation of Peat Land," was read by Dr. Ian M. Robertson.

The meeting was followed by an informal dinner at which reference was made to the advantages of co-operation between the three Societies. On the following day, a visit was paid to the Macaulay Institute at the invitation of the Director, Dr. W. G. Ogg.

Ordinary Scientific Meeting, Thursday, June 6th, 1935, at 8 p.m., Dr. 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 May 18th, of Mr. F. B. Hirst, who was elected a Fellow in 1923.

The PRESIDENT stated that

1. He had conveyed the congratulations of the Society to Sir Frederick Gowland Hopkins on his receiving the Order of Merit.

2. The Council had authorised the signing of the Agreement setting forth the terms of the scheme of co-operation between the Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry.

The following were formally admitted Fellows of the Chemical Society: Richard Wild and G. A. Benford.

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

Victor Laurence Breeze, Nestor, Kingston, Lewes.
Richard Robertson Davidson, Seabank Cottage, Promenade, Wallasey, Cheshire.
Philip Farrugia, B.Sc., M.D., 12, Sda Sperone, Valletta, Malta.
Andrew Moir Malcolm, 31, Reed Pond Walk, Romford.
Samuel Aaron Miller, B.A., B.Sc., 62, Camp Road, Leeds, 7.
David John Norman, A.I.C., Ringwold, Cowdray Avenue, Colchester.
Arthur George Pollard, 134, Green Lane, Edgware, Middlesex.
John Cyril Roberts, B.Sc., B.Pharm., A.I.C., 4, Dewsland Park Road, Newport, Mon.
George Henry Rowland, 30, Falkland Road, Hornsey, N. 8.
Charles Simons, 187, High Road, Tottenham, N. 15.
Harold Webber, B.Sc., Clyde House, Cambridge Street, Loughborough.

and for the second time in favour of eight candidates.

Dr. M. Carlton and Mr. A. H. Leckie were elected Scrutators, and a ballot for the election of Fellows was held. The following were subsequently declared elected :

Albert Ernest Alexander, B.Sc.	Shridhar Sarvottam Joshi, D.Sc.
Edmund Jack Ambrose.	Raymond Mould Kelham.
Kenneth Drummond Anderson, B.A., B.Sc.	James Herbert Kemp, B.A.
Francis William Aston, M.A., Sc.D., D.Sc., LL.D., F.R.S.	Harold Frederick Kenyon, B.A.
Leonard Belchetz, M.Sc.	Hans Adolf Krebs, M.A., M.D.
Florence Ogilvy Bell.	Walter McGeorge, B.Sc., A.I.C.
Gerald Lorimer Birch.	John Richardson Marrack, M.A., M.D.
Ernest Jack Buckler.	James Raeburn Miller, Ph.C.
Eileen Valerie Clague.	Temple Clifford John Ovenston, Ph.D., A.I.C.
Arthur Thurlby Dann, M.Sc.	Donald Purdie, B.A.
Thomas Arthur Dent.	Gerard Lionel Ransome, B.Sc.
Frederick Charles Frank, B.A., B.Sc.	John Keith Roberts, Ph.D.
Ronald George Jutta Fraser, Ph.D.	James Roper Robinson.
Ernst Friedmann, Ph.D., M.D.	Knut Ronaasen, B.Sc.
Donald George Giles.	Jack Schulman, Ph.D.
Walter Scott Hughes, B.S., M.Sc.	Delia Margaret Simpson, B.A.
Stanley Eric Janson, M.A., Ph.D., B.Sc.	William Russell Addison Taylor.
James Sowden Jennings, B.Sc.	James Coward Thornton.
John Christopher Jewell, B.Sc., A.R.C.S.	Maung Tin, M.R.C.S., L.R.C.P.
Martin William Jones, B.A.	Bortolo Lino Vanzetti, D.Chem.
	John Watts Wright.

The following papers were read :

- “ The interpretation of the dissociation pressures of the palladium-hydrogen system.”
By M. H. HEY.
- “ The stereochemical relationships of some optically active amines and amino-acids. Part I. The configuration of valine.” By F. BARROW and G. W. FERGUSON.
- “ The preparation of organic compounds containing deuterium. Dideuteromalonic deuteriacid and trideuteracetic deuteriacid.” By C. L. WILSON.
- “ Experiments on deuterobenzene. Part I.” By G. R. CLEMO and A. MCQUILLEN.

THE LIBRARY.

The Library will be closed for stocktaking from Monday, August 5th, until Saturday, August 17th (inclusive). During the following four weeks (August 19th to September 14th) the Library will close daily at 5 p.m.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee consisting of the Presidents of the Chemical Society, the Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will proceed to make an award of the Harrison Prize in December 1935, provided that, in the opinion of the Committee, there is a candidate of sufficient distinction to warrant the award of the Prize.

The Prize, of the value of about £150, is to be awarded to the chemist of either sex, being a natural born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, during the previous five years has conducted the most meritorious and promising original investigations in any branch of pure or applied chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should contain the following information :

- (a) Name (in full).
- (b) Age (birth certificate to accompany application).
- (c) Degrees (name of University where obtained).
- (d) Other qualifications.

- (e) Experience.
- (f) Titles of published papers, with authors' names, including full references to publication.
- (g) Where research was carried out.
- (h) Testimonials or references.
- (i) Any other information bearing on the application.

The Selection Committee is prepared to receive applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by

The President,
The Chemical Society,
Burlington House,
Piccadilly,
London, W. 1.

not later than Monday, December 2nd, 1935.

List of Papers, or Abstracts thereof, received between May 16th and June 20th, 1935. (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 nitrates of lanthanum and their solubilities in water." By J. A. N. FRIEND.
- "Addition of hydrogen bromide to non-terminal double bonds. *iso*Undecenoic acid." By P. L. HARRIS and J. C. SMITH.
- "The optically active diphenylhydroxyethylamines and *iso*hydrobenzoin. Part VI. The di-*o*-methoxyphenylhydroxyethylamines and related substances." By N. A. B. WILSON and J. READ.
- "Researches in the carvone series. Part III. Carvomenthols, *l-isocarvomenthone* and *l-isocarvomethylamine*." By R. G. JOHNSTON and J. READ.
- "Digitalis glucosides. Part IV. The existence of two anhydrodigitoxigenins." By S. SMITH.
- "The reactivity of halogen compounds. Part III. The velocities of reaction, energies of activation, and probability factors for the reaction between 2:4-dinitrobenzene and some aromatic, primary amines." By A. SINGH and D. H. PEACOCK.
- "Studies in chemisorption on charcoal. Part VI. The p_H of charcoal suspensions." By A. KING.
- "Studies in the indole series. Part I. Preparation and characterisation of α -phenylindole and its *Bz*-methyl homologues." By N. CAMPBELL and R. C. COOPER.
- "Studies in the indole series. Part II. The mechanism of the Fischer indole synthesis." By N. CAMPBELL and R. C. COOPER.
- "Studies in the indole series. Part III. The structure of the indole 'nitroso-compounds.'" By N. CAMPBELL and R. C. COOPER.
- "Attempts to find new antimalarials. Part XI. Synthesis of ω -substituted derivatives of 8-methylquinolines." By W. O. KERMAK, W. MUIR, and T. W. WIGHT.
- "*N*-Benzhydryl-*N'*-aryl-formamidines." By L. E. HINKELE, E. E. AYLING, and J. H. BEYNON.
- "The influence of substituents on the energy of activation. A criticism." By D. H. PEACOCK.
- "The reactivity of halogen compounds. Part IV. The effect of the addition of inactive substances on the rate of reaction, energy of activation and probability." By A. SINGH and D. H. PEACOCK.
- "The hydrolytic fission of aromatic ketones." By P. HILL and W. F. SHORT.
- "Terpene compounds. Part II. Synthesis of homoapofenchocamphoric acid." By J. C. BARDHAN, S. K. BANERJI, and M. K. BOSE.

- “Certain physical properties of cyanogen and its halides.” By R. P. COOK and P. L. ROBINSON.
- “The configuration of heterocyclic compounds. Part II. Some phenoxarsonium salts.” By (MISS) M. S. LESSLIE and E. F. TURNER.
- “Electrometric titration curves of dibasic acids. Part V. Dissociation constants of cyclopentane dicarboxylic acids. An attempted check on methods proposed for calculation of molecular dimensions.” By C. K. INGOLD and H. G. G. MOHRHENN.
- “Hydrolysis of magnesium boride.” By R. C. RAY and P. C. SINHA.
- “The condensation of halogen-substituted aldehydes with nitromethane.” By F. D. CHATTAWAY and P. WITHERINGTON.
- “The crystalline structure of the sugars. Part I. Simple sugars and glycosides; preliminary data.” By E. G. COX, T. H. GOODWIN, and (MISS) A. I. WAGSTAFF.
- “The resinols of the latex of *Holarrhaena antidysenterica*.” By J. C. CHOUDHARI and D. H. PEACOCK.
- “Electron transfer and free hydroxyl oxidation mechanisms in volumetric analysis.” By A. R. UBBELOHDE.
- “ $\beta\beta'\beta''$ -Trichlorotriethylamine.” By H. McCOMBIE and D. PURDIE.
- “On the mechanism of additions to double bonds. Part II. The steric course of two diene syntheses.” By A. WASSERMANN.
- “Studies in solvent action. Part X. Rotatory powers of dimethylene tartrate, methylene tartaric acid, and its dimethyl ester, in the presence of added solvents and salts.” By H. G. RULE and J. P. CUNNINGHAM.
- “Studies in solvent action. Part XI. Influence of solvent, concentration, and temperature changes upon the rotatory powers of *l*-menthyl *o*-substituted benzoic esters.” By H. G. RULE and A. DUNBAR.
- “Salt formation of certain homonuclear naphthalene derivatives.” By H. H. HODGSON and R. L. ELLIOTT.
- “The condensation of naphthalene with phthalic anhydride.” By E. DE B. BARNETT and N. R. CAMPBELL.
- “Anionotropic and prototropic changes in cyclic systems. Part V. The system derived from *l*-hydroxyindene.” By H. BURTON and C. W. SHOPPEE.
- “Studies in the sterol group. Part XX. Lumisterol.” By I. M. HEILBRON, F. S. SPRING, and P. A. STEWART.
- “Influence of substituents on the additive reactivity of ethylene derivatives. Part II. Effects of catalysts on the relative rates of addition of bromine.” By S. V. ANANTA-KRISHNAN and C. K. INGOLD.
- “A new reaction of the dichloroacetyl group in derivatives of glucose.” By D. J. BELL.
- “The dipole moments of vapours. Part II.” By L. G. GROVES and S. SUGDEN.
- “4-Methoxycinnamylidenepyruvic acid.” By E. FRIEDMANN.
- “The energetics of catalysis. Part V. The temperature coefficients of hydrogenation processes.” By E. B. MAXTED and C. H. MOON.
- “The preparation of 4-methylthiazole-5-carboxylic acid.” By (MISS) M. L. TOMLINSON.
- “The conversion of derivatives of glucose into derivatives of altrose by simple optical inversions.” By G. J. ROBERTSON and C. F. GRIFFITH.
- “The alkaloids of *Anagyris foetida*. Part II.” By H. R. ING.
- “Modified cinchona alkaloids. Part II. The action of sulphuric acid on quinine and quinidine.” By T. A. HENRY, W. SOLOMON, and E. M. GIBBS.
- “Studies of the Beckmann change. Part III. The rearrangement of ketoxime hydrochlorides.” By A. W. CHAPMAN.
- “The chemistry of the caryophyllene series. Part IV. Clovene and clovenic acid.” By R. D. BLAIR.
- “Condensation of balata bromide with phenols and phenolic ethers.” By T. HARDIE and J. A. MAIR.
- “The action of zinc dust and alcohol on the hydrochlorides of gutta-percha and balata.” By T. HARDIE and J. A. MAIR.

- "The benzylation of aromatic amines. Part V. The rates of reaction, energies of activation, and probability factors for the reactions between *o*-, *m*-, and *p*-cyanobenzyl chloride and aniline, monoethylaniline, and dimethylaniline." By D. H. PEACOCK and P. THA.
- "Derivatives of *ortho*-thioldiphenylamine." By W. J. EVANS and S. SMILES.
- "The ω -3-amino-4-methoxybenzoyl and ω -3-amino-4-ethoxybenzoyl derivatives of propionic, butyric, and valeric acid." By S. G. P. PLANT and (Miss) M. E. TOMLINSON.
- "The solubility of non-electrolytes. Part II. The influence of the polar group on the free energy of hydration of aliphatic compounds." By J. A. V. BUTLER and C. N. RAMCHANDANI.
- "*n*-Propyl and *n*-butyl gallate." By R. M. HARRIS and J. C. SMITH.
- "Polysaccharides. Part XX. The molecular size of amylose and the relationship between amylose and starch." By D. K. BAIRD, W. N. HAWORTH, and E. L. HIRST.
- "Modified cinchona alkaloids. Part III. Chlorodihydro-bases." By J. A. GOODSON.
- "Wolfram's red salt and the possibility of tervalent platinum." By H. D. K. DREW and H. J. TRESS.
- "Plato- and plati-diammines containing methylamine." By H. D. K. DREW and H. J. TRESS.
- "Relation between molecular orientation polarisation of substances in the liquid, dissolved, and gaseous states." By (Mrs.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.

ADDITIONS TO THE LIBRARY.

I. Donations.

BUTLER, J. A. V. The fundamentals of chemical thermodynamics. 2nd edition. Part I. London 1935. pp. xvi + 253. ill. (*Recd.* 4/6/35.)
From the Author.

INSTITUT INTERNATIONAL DE CHIMIE SOLVAY. Cinquième Conseil de Chimie. Rapports et discussions relatifs à l'oxygène, ses réactions chimiques et biologiques. Paris 1935. pp. xvi + 355. 75 fr. (*Recd.* 21/5/35.)
From Sir William J. Pope, K.B.E.

INTERNATIONAL UNION OF PURE AND APPLIED PHYSICS. Reports on symbols, units, and nomenclature approved by the general assembly of the Union at its meeting in London on 5th October 1934. London 1935. pp. vi + 40. (*Reference.*) 5s. net.

INTERNATIONAL UNION OF PURE AND APPLIED PHYSICS and PHYSICAL SOCIETY. International Conference on Physics, London 1934. Papers and discussions. 2 vols. London 1935. pp. viii + 257, viii + 183. ill. (*Reference.*) 25s. net.

From the Physical Society.

NETHERLANDS. The development of science in the Netherlands during the last half century. Leiden 1930. pp. viii + 102. ill. (*Recd.* 8/6/35.)

From the Department of Education.

PHYSICAL SOCIETY. Reports on progress in physics. [Vol. I.] London 1934. pp. iv + 371. ill. (*Reference.*) 12s. 6d. net.

From the Society.

SAUER, EBERHARD. Kolloidchemisches Praktikum. Berlin 1935. pp. x + 112. ill. M. 4.50. (*Recd.* 22/5/35.)

From Mr. Emil Hatschek.

SCONZO, ANTONINO. Principi teorici e consigli pratica d'analisi chimica qualitativa inorganica. Sulmona 1935. pp. xiv + 276. ill. L. 16. (*Recd.* 27/5/35.) From the Author.

THORPE, SIR EDWARD. Dictionary of applied chemistry. Supplement. By JOCELYN FIELD THORPE and MARTHA ANNIE WHITELEY. Vol. II. London 1935. pp. xx + 727. ill. (*Reference.*) 60s. net. From the Editors.

II. By purchase.

AMERICAN PUBLIC HEALTH ASSOCIATION and ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. Standard methods of milk analysis, bacteriological and chemical. 6th edition. New York 1934. pp. xiv + 105. ill. \$1.50. (*Recd.* 20/5/35.)

ELAM, C. F. (Mrs. G. H. Tipper.) Distortion of metal crystals. Oxford 1935. pp. xiv + 182. ill. 15s. net. (*Recd.* 20/5/35.)

FIELD, SAMUEL, and WEILL, A. DUDLEY. Electroplating: a survey of modern practice, including nickel, zinc, cadmium and chromium. 2nd edition. London 1935. pp. x + 256. ill. 7s. 6d. net. (*Recd.* 20/5/35.)

INTERNATIONAL SOCIETY OF LEATHER TRADES' CHEMISTS. *British Section*. Technical aspects of emulsions: being the papers read at a symposium. London 1935. pp. viii + 150. ill. 6s. net. (*Recd.* 20/5/35.)

IVANOVSKY, LEO. Ozokerit und verwandte Stoffe. Vol. I. Wien 1935. pp. xvi + 192. ill. *M. 8.* (*Recd.* 29/5/35.)

LIEBEN, FRITZ. Geschichte der physiologischen Chemie. Leipzig 1935. pp. x + 743. *M. 23.* (*Recd.* 6/6/35.)

PATTERSON, AUSTIN M. A German-English dictionary for chemists. 2nd edition. New York 1935. pp. xx + 411. (*Reference.*) \$3.

SPEAKMAN, J. C. An introduction to the modern theory of valency. London 1935. pp. viii + 157. 4s. 6d. net. (*Recd.* 20/5/35.)

III. Pamphlets.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Building Research.* Tech-

nical Paper No. 16. The quaternary system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-Fe}_2\text{O}_3$ in relation to cement technology. By F. M. LEA and T. W. PARKER. London 1935. pp. viii + 52. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Chemistry Research Board.* Report for the period ended 31st December 1934, etc. London 1935 +.

LOB, GEORGES. *NN'*-Dibenzyl-aethyleendiamine. Leiden 1935. pp. xvi + 157.

UNITED STATES. *Department of Commerce.* National Bureau of Standards. Supplement to Circular C398. Standard samples issued or in preparation. Washington 1935. pp. 11.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

A meeting under the auspices of the Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry (Manchester Sections) was held on the 10th October, 1935, in the Theatre of the Central Library, Manchester, when Professor N. V. Sidgwick gave a lecture on "Modern Structural Chemistry," Professor I. M. Heilbron being in the Chair. The Lecture was followed by a discussion. A vote of thanks to the Lecturer was proposed by Mr. A. McCulloch, and was seconded by Mr. F. Scholefield. About 200 were present.

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Ordinary Scientific Meeting, Thursday, October 17th, 1935, 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.
Walter Ernest Adeney	1881	16th June.
Arthur Bramley	1913	19th July.
Samuel Henry Clifford Briggs	1905	24th August.
Samuel Francis Burford	1891	29th August.
Julius Berend Cohen	1885	14th June.
Harry Cooper	1919	28th August.
Thomas Cuthbert Day	1881	13th June.
Harold Ward Dudley	1919	2nd October.
Peter Fenton	1919	14th June.
Harold Follows	1885	8th May.
Egbert Grant Hooper	1888	17th September.
Charles Thomas Kingzett	1873	29th July.
Theophilus Henry Lee	1897	30th April, 1926.
Arthur Dehon Little	1923	1st August.
Robert Andrew Scott Macfie	1891	9th June.
Frederick Lawrence Overend.....	1887	5th June.
Walter Ritchings	1934	5th August.
Christopher Caiger Smith	1923	10th September.
George William Slatter	1878	22nd June.

The PRESIDENT announced that :

1. The Agreement to form a Chemical Council had been signed by Council on June 20th, 1935 (see page 63).

2. In June the Council appointed Professor H. E. Armstrong to fill the vacancy among the Vice-Presidents who have filled the office of President caused by the death of Sir James Walker.

3. The Council had expressed thanks to Messrs. A. J. B. Cooper and O. J. W. Napier for presenting copies of the Society's publications.

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

Frederick John Averill, B.Sc., 87, Gillot Road, Edgbaston, Birmingham.
 Russell Dudley Axam, 411, Liverpool Road, Ashfield, Sydney, Australia.
 Leslie Arthur Bashford, B.Sc., A.R.C.S., Brooklands, Billingshurst, Sussex.
 James Bhattacharjee, B.Sc., M.R.C.V.S., Veterinary College, Insein, Burma.
 Benjamin Markus Bloch, R.Nat.Dr., 6, Featherstone Buildings, W.C. 1.
 Francis Stephen Bridson-Jones, B.A., 71, Hartington Road, Sefton Park, Liverpool, 8.

William Raymond Bulcraig, B.Sc., Devonshire Hall, Cumberland Road, Headlingley, Leeds, 6.
 Alan Henry Daniels, B.A., 115, Shirley Road, Southampton.
 James Gordon Napier Drevitt, B.A., 12, Cliff Terrace, Kendal, Westmorland.
 Denis Ian Duveen, 16, Avenue Close, Avenue Road, N.W. 8.
 Edward Pierce Eastland, Ph.D., A.R.C.S., D.I.C., 10, The Terrace, Barnes, S.W. 13.
 John Vernon Edmonds, B.Sc., A.I.C., Sycamore House, High Street, Royston, Yorks.
 John Clifford Holgate Ellis, B.A., 44, Clarendon Road, Notting Hill, W. 11.
 Kenneth Davis Errington, A.R.C.S., 81, Iffley Road, Hammersmith, W. 6.
 Eric Paul Goodings, 84, Nower Road, Dorking, Surrey.
 Arthur Greenwood, 1, Dodbrooke Road, West Norwood, S.E. 27.
 William Edward van Heyningen, M.Sc., Emmanuel College, Cambridge.
 William Frederick Higgins, Ph.D., M.Sc., 291, Queens Drive, West Derby, Liverpool, 13.
 Fritz Hiller, Dr.-Ing., 41, South Grove, Highgate, N. 6.
 Maurice Leonard Hobday, 2, Overton Court, Wanstead, Essex.
 Walter John Hurran, B.Sc., Chill Mill, Rusthall, Tunbridge Wells.
 Charles George Jones, B.A., 80, Fawnbrake Avenue, Herne Hill, S.E. 24.
 Colin Richard Morrison Jones, B.Sc., A.R.C.S., Torridge, Chislehurst.
 John Kenyon Netherton Jones, M.Sc., A.I.C., 4, Hawkesley Drive, Northfield, Birmingham.
 Harold Kitchen, B.Sc., 278, Birchfield Road, Birmingham, 20.
 Harold John Rowland Letts, B.A., 11, Greenlands Road, Staines.
 Sydney Herbert Marshall, B.Sc., 16, Park Crescent, Armley, Leeds, 12.
 George Thomas Oswald Martin, B.Sc., 136, The Avenue, Tottenham, N. 17.
 Samuel Derek Drake Morris, B.A., 63, Coldershaw Road, West Ealing, W. 13.
 Kenneth George Alfred Pankhurst, 6, Barmouth Foad, Wandsworth, S.W. 18.
 Donald Robertson, B.A., Dell View, Southend Road, Beckenham.
 Bernard Arthur Rose, B.Sc., A.R.C.S., 6, Hillcrest Road, Walthamstow, E. 17.
 Erwin Schwenk, Dr., 102, Harrison Street, Montclair, N. J., U.S.A.
 Barry Alderson Scott, B.Sc., A.R.C.S., 53, Carleton Road, Tufnell Park, N. 7.
 Frederick Randall Smith, Ph.D., c/o Mrs. Phillips, 53, Cavendish Drive, Rock Ferry, Cheshire.
 Herbert George Gordon Thompson, 22, Elmhurst Avenue, Mitcham.
 George Hilton Twigg, B.Sc., St. John's College, Cambridge.
 Lancelot Lionel Ware, B.Sc., 65, The Chase, Wallington, Surrey.
 James Howarth Williams, Imperial College Hostel, Prince Consort Road, S.W. 7.

And also the following which have been accepted by the Council under Bye-Law I (2) :

Russell James Laurence Allen, M.Sc., Glebe House, Reid, Canberra, Australia.
 William Allen, M.Sc., 2, Bridge Street, Lithgow, N.S.W.
 Marcus Harry French, M.A., Dip. Agric., Veterinary Department, Mpwapwa, Tanganyika.
 William Robert Kerr, 86, Fitzroy Street, Burwood, Sydney, N.S.W.
 Joseph Berthold Niederl, Ph.D., 32, Waverly Place, New York, U.S.A.
 Walter Thomas Robertson, jun., "Highlands," Swann Road, Taringa, Brisbane, Queensland.
 Charles Allen Thomas, B.A., D.Sc., President of the Thomas and Hochwalt Laboratories, Inc.,
 Box 318, RR 2, Dayton, Ohio.
 Vincent du Vigneaud, Prof., M.S., Ph.D., 4,000 Cathedral Avenue, Washington.

Forms of Recommendation for Fellowship of eleven candidates were read for the second time.

The following papers were read :

"Electro-endosmosis in non-aqueous solutions." By H. P. DAKIN, F. FAIRBROTHER, and A. E. STUBBS.
 "Lower oxides and sulphates of iodine." By R. K. BAHL and J. R. PARTINGTON.
 "The oxidation of silicon hydrides. Part I." By H. J. EMELÉUS and K. STEWART.

A meeting under the auspices of the Chemical Society was held on Friday, October 18th, 1935, in the Chemistry Lecture Theatre of the University of Liverpool, when Dr. Wm. Wardlaw, F.I.C., delivered a lecture entitled "Some Recent Advances in Stereochemistry." A vote of thanks to Dr. Wardlaw was moved from the Chair by Professor E. C. C. Baly, and carried with acclamation.

ANNUAL REPORTS FOR 1935, VOL. XXXII.

Applications for the Annual Reports for 1935, at the reduced price of 5s. 6d., should reach the Assistant Secretary by January 15th, 1936.

BRITISH CHEMICAL ABSTRACTS "A" FOR 1936.

(Printed on one side of the page only.)

Abstracts "A" (Pure Chemistry) for 1936, printed on one side of the page only, will be supplied to Fellows who make application by December 31st, 1935. The price is £1 10s. A remittance for this amount must accompany each application, and Fellows should state whether the copy should be gummed or ungummed.

ADVANCE PROOFS OF ABSTRACTS OF PAPERS READ AT THE ORDINARY SCIENTIFIC MEETINGS.

Fellows are reminded that advance proofs of abstracts of papers to be read and of discussions to be held are sent out before each meeting. Fellows not already receiving such proofs who wish to do so should inform the Assistant Secretary.

RESEARCH FUND.

A Meeting of the Research Fund Committee will be held in December next. Applications for grants, to be made on forms obtainable from the Assistant Secretary, must be received on or before Monday, 2nd December, 1935. Applications from Fellows will receive prior consideration.

All persons who have received grants, and whose accounts have not been declared closed by the Council, are reminded that reports must be returned by December 2nd.

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.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee, consisting of the Presidents of the Chemical Society, the Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will proceed to make an award of the Harrison Memorial Prize in December next.

The Prize, of the value of about £150, will be awarded to the chemist of either sex, being a natural born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, during the previous five years has conducted the most meritorious and promising original investigations in any branch of pure or applied chemistry and published the results of those investigations in a scientific periodical or periodicals.

Provided that, in the opinion of the Selection Committee, there is a candidate of sufficient distinction to warrant an award of the Prize, the next award will be made in December, 1935.

Applications, five copies of which must be submitted, should contain the following information :

- (a) Name (in full).
- (b) Age (birth certificate must accompany application).
- (c) Degrees (name of University where obtained).
- (d) Other qualifications.
- (e) Experience.
- (f) Titles of published papers, with authors' names, including full references to publication.

- (g) Where research was carried out.
- (h) Testimonials or references.
- (i) Any other particulars bearing on the application.

The Selection Committee is prepared to receive applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by

The President,
The Chemical Society,
Burlington House,
Piccadilly,
London, W. 1,

not later than Monday, December 2nd, 1935.

EXEMPTIONS FROM KEY INDUSTRY DUTY.

The question of the renewal of exemptions from Key Industry Duty under Section 10 of the Finance Act, 1926, is now under consideration by the Board of Trade. A list of articles which are exempted from duty until December 31st, 1935, has been filed in the library for reference.

SOUTH AFRICAN EMPIRE EXHIBITION.

The South African Empire Exhibition, which will include exhibits from all parts of the Empire, will be held in Johannesburg from September to December 1936. The Associated Scientific and Technical Societies of South Africa has agreed to place its headquarters, Kelvin House, Fox Street, Johannesburg, together with its organisation, at the disposal of duly accredited visitors. Such visitors will be made honorary Members of the Club House during their visit and will enjoy the privileges of membership. They will also be invited to attend all meetings of the following ten Societies comprising the Association: Association of Certificated (S.A.) Mechanical and Electrical Engineers; Chemical, Metallurgical, and Mining Society of S. Africa; Geological Society of S. Africa; Institute of Land Surveyors of the Transvaal; South African Association for the Advancement of Science (Witwatersrand Branch); South African Association of Assayers; South African Chemical Institute; South African Institute of Electrical Engineers; South African Institution of Engineers; and the Transvaal Provincial Institute of S. African Architects.

Information regarding facilities for travel, etc., can be obtained from the London Secretary of the South African Empire Exhibition (21, Tothill Street, Westminster, S.W. 1) or direct from the Head Office (P.O. Box 114, Johannesburg, S. Africa).

THIRD WORLD POWER CONFERENCE.

The Third World Power Conference will be held in Washington, U.S.A., from the 7th to 12th September, 1936, by invitation of the State Department of the United States Foreign Office.

The general subject to be discussed is National Power Economy, and among the aspects of this subject to be treated are Physical and Statistical Bases; Technical, Economic, and Social Trends; Organisation of Fuel Industries and of Gas and Electric Utilities; Public Regulations; National and Regional Planning; Conservation of Fuel and Water Resources; Rationalisation of Distribution; National Power and Fuel Policies.

The Second Congress of the International Commission on Large Dams of the World Power Conference will be held in Washington at the same time.

Application for further particulars should be made to the British National Committee of the World Power Conference, 36, Kingsway, London, W.C. 2.

THE CHEMICAL COUNCIL.
CONSTITUTION.

AN AGREEMENT made this first day of July 1935 BETWEEN the CHEMICAL SOCIETY (incorporated by Royal Charter 1848) having its Registered Address at Burlington House, Piccadilly, London, W. 1, THE INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND (incorporated by Royal Charter 1885) having its Registered Address at 30, Russell Square, London, W.C. 1, and the SOCIETY OF CHEMICAL INDUSTRY (incorporated by Royal Charter 1907) having its Registered Address at Central House, Finsbury Square, London, E.C. 2 (hereinafter called "the constituent bodies").

WHEREAS the constituent bodies have established a Fund (hereinafter called "the Fund") to be administered by the Chemical Council hereinafter referred to and having for its sole object the allocation of grants to the constituent bodies for Charitable purposes especially for the co-ordination of scientific and educational publications, the publication of new discoveries in chemical science and of their application to the arts and manufactures, the promotion of research, the maintenance of a library for research and education purposes and the provision and equipment of a suitable building or buildings for all or any of the purposes aforesaid. NOW IT IS HEREBY AGREED AND DECLARED by and between the constituent bodies as follows:—

(1) There shall be set up as soon as possible after the signing of this Agreement a body to be called "The Chemical Council" (hereinafter referred to as "the Council") which will consist of not less than twelve members of whom three shall be nominated by the Council of the Chemical Society, three by the Council of the Institute of Chemistry and three by the Council of the Society of Chemical Industry while the remaining three members shall be three representatives of industry co-opted by the other nine members, such representatives to be co-opted in the first instance on the nomination of The Association of British Chemical Manufacturers.

(2) The Council shall be empowered from time to time to co-opt as members of the Council representatives of other bodies but only with the separate and collective approval of the respective Councils of the Chemical Society, the Institute of Chemistry and the Society of Chemical Industry.

(3) The object and purposes of the Council shall be those set out in the preamble to this Agreement and the promotion of any other object of charitable scientific or educational interest which may be approved by each of the Councils of the constituent bodies.

(4) For the better promotion of the object and purposes hereinbefore mentioned there shall be vested in the Council the collection and allocation of funds contributed by the constituent bodies and from outside sources for the promotion and support of such object and the co-ordination of the activities and administration of the constituent bodies in relation to the object and purposes of this Agreement.

(5) There shall be vested in the Council the general administration of the funds available for the educational and scientific publications of the constituent bodies but provided always that each constituent body shall be entitled to decide as heretofore what matter shall appear in its publications. The Council of each constituent body shall after consultation with the Chemical Council appoint its Editorial staff.

(6) The Library at present belonging to the Chemical Society and located at Burlington House, Piccadilly, London, W. 1, shall remain the property of the Chemical Society but provided always that—

- (a) The management of the library shall be delegated by the Council of the Chemical Society to a joint library committee consisting of representatives nominated by the Councils of the constituent bodies and any other organisations contributing to its maintenance. The representation on the library committee shall be determined by the Council on the basis of the total contributions to the Library Funds. The library committee shall be responsible to the Council.
- (b) The expenditure on fittings, furniture, books, periodicals and binding shall after being submitted to and approved by the Council of the Chemical Society be borne solely by that Society.
- (c) The net annual maintenance expenditure (that is the total salaries, wages, super-annuation, printing, stationery, postages, lighting, heating, storage and insurance, less contributions from sources other than from the constituent bodies) shall be borne by the constituent bodies in proportion to their membership with due allowance for overlap and excluding those not yet admitted to full membership.

(7) The Council may in its discretion allocate special funds to the library in diminution of the contributions to be made by the constituent bodies under Clause 6 (c) above.

(8) All members of any of the constituent bodies (and in addition registered students of the Institute of Chemistry and Associate members of the Society of Chemical Industry) shall have the right to use the library on equal terms under regulations to be laid down by the joint library committee, and approved by the Council.

(9) The existing arrangements between the Chemical Society and other bodies at present contributing towards the maintenance of the library shall be continued until regulations as to contributions shall be determined by the Council and approved by the Councils of the constituent bodies.

(10) Societies not at present contributing to the funds of the library of the Chemical Society shall be admitted to the use of the library under regulations to be approved by the Council.

(11) The Council shall present an annual Report and Statement of Accounts to each of the constituent bodies.

(12) The income and property of the Council from wheresoever derived shall be applied solely towards the promotion of the object and purposes of the Council as hereinbefore set forth and no portion shall be paid or transferred directly or indirectly by way of dividend bonus or otherwise howsoever by way of profit to members of the Council. All money not required immediately for the purposes of the Fund may be invested at the discretion of the Council in duly authorised Trustee securities in the name of the nominees of the Bankers of the Council and on behalf thereof.

(13) The Council shall have power from time to time to make such rules and regulations as it shall see fit for the conduct of its business including rules regarding the number of members who shall constitute a quorum and the retirement by rotation of its members. Provided always that any rules and regulations made by the Council shall be subject to the approval of each of the Councils of the constituent bodies.

No member of Council shall serve for more than three consecutive years, but shall be eligible for reappointment after the lapse of twelve Calendar months. Provided always that the members of the first Council shall serve for three years and thereafter one third of the members of the first Council shall retire at the end of each year (that is one representative of each constituent body and one co-opted member) but shall be eligible for reappointment as hereinbefore mentioned. Failing agreement the members to retire at the end of each year shall be decided by lot.

(14) This agreement is to be for a period of seven years from the date hereof and shall continue thereafter for successive periods of three years subject to the right of any one of the constituent bodies to retire therefrom at the end either of the first seven years or of any triennial period upon giving one year's previous notice in writing to the other constituent bodies.

Provided always that it shall be competent for the constituent bodies by mutual agreement at any time during the currency of this agreement or any extension thereof to set up a permanent and centralised body to take the place of the present arrangement.

(15) In the event of the Agreement expiring by effluxion of time or being terminated for any cause such as is indicated in any foregoing clause hereof (other than with a view of being replaced by some more permanent arrangement) any funds in the hands of or at the disposal of the Council at the date of such expiration or termination shall be applied by the Council towards the promotion of any object of charitable scientific or educational interest as set out in Clause 3 hereof Provided always that any funds which may have been received by the Council for a specified purpose shall be applied by it for the promotion of that purpose only.

IN WITNESS whereof these presents have been entered into the day and year first above written.

Signed and sealed on behalf of The Chemical Society in the presence of the Council of the Society.

N. V. SIDGWICK,
President.

EMILIE MOND,
Hon. Treasurer.

S. SUGDEN
J. MASSON GULLAND } *Hon.*
H. J. T. ELLINGHAM } *Secretaries.*

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

JOCELYN THORPE,
President.

PATRICK H. KIRKALDY,
Hon. Treasurer.

RICHARD B. PILCHER,
Registrar and Secretary.

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

EDWIN THOMPSON, *President* } *Members of*
R. T. COLGATE, *Honorary Treasurer* } *Council.*

H. J. POOLEY,
General Secretary.

L.S.

L.S.

L.S.

Chairman :

R. H. Pickard, Ph.D., D.Sc., F.R.S.

Honorary Treasurer :

Professor J. F. Thorpe, C.B.E., D.Sc., F.R.S.

The Chemical Society :

Professor N. V. Sidgwick, C.B.E., M.A., Sc.D., F.R.S.

Professor I. M. Heilbron, D.S.O., D.Sc., F.R.S.

Professor G. T. Morgan, O.B.E., LL.D., D.Sc., F.R.S.

The Institute of Chemistry :

Professor J. F. Thorpe, C.B.E., D.Sc., F.R.S.

F. G. Edmed, O.B.E., B.Sc., A.R.C.S., F.I.C.

Patrick H. Kirkaldy, F.I.C.

The Society of Chemical Industry :

L. H. Lampitt, D.Sc., F.I.C.

R. H. Pickard, Ph.D., D.Sc., F.R.S.

J. Arthur Reavell, M.I.Chem.E., M.I.Mech.E.

Nominated by the Association of British Chemical Manufacturers :

A. E. Dunstan, D.Sc., F.I.C.

J. Davidson Pratt, O.B.E., M.A., B.Sc., F.I.C.

Wm. Rintoul, O.B.E., F.I.C.

Honorary Secretary :

Richard B. Pilcher, O.B.E., F.C.I.S.

List of papers, or abstracts thereof, received between June 20th and October 17th, 1935. (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.)

- “Some remarks on the red and green forms of Magnus’s salt.” By H. D. K. DREW and H. J. TRESS.
- “The parachor, surface tension, and density of substituted phenols and phenol ethers.” By A. BURAWOY and I. (MARKOWITSCH-)BURAWOY.
- “Auxochromes and resonance.” By C. R. BURY.
- “The selective adsorption of heavy water.” By A. KING, F. W. JAMES, C. G. LAWSON, and H. V. A. BRISCOE.
- “Dissolved solids as solvents.” By J. K. WILSON and R. WRIGHT.
- “Property-composition curves for binary solute systems.” By A. CHAPLIN, C. WILSON, and R. WRIGHT.
- “Note on the use of keten in the Friedel-Crafts reaction.” By F. S. SPRING and T. VICKERSTAFF.
- “Absorption spectra in relation to the constitution of derivatives of isatin and carbostyryl.” By R. G. AULT, E. L. HIRST, and R. A. MORTON.
- “The addition of halogens to unsaturated acids and esters. Part V. The bromination of *m*-methoxycinnamic acid and its ethyl ester.” By J. I. JONES and T. C. JAMES.
- “Optical rotatory dispersion in the carbohydrate group. Part VI. The amide rotation rule.” By T. L. HARRIS, E. L. HIRST, and C. E. WOOD.
- “Strychnine and brucine. Part XXXV. Hofmann degradation of dihydrobrucidine.” By O. ACHMATOWICZ, (MISS) P. LEWI, and R. ROBINSON.
- “The liquid solute.” By W. D. BANCROFT.

- “The unsaturation and tautomeric mobility of heterocyclic compounds. Part VI. The mobility of 5-substituted 1-hydroxybenzthiazoles, and the ultra-violet absorption of mobile and static derivatives of 1-hydroxybenzthiazole.” By R. F. HUNTER and E. R. PARKEN.
- “Separation of thorium from the rare earths by means of hydrosulphite.” By P. KRISHNAMURTI.
- “Applications of thallium compounds in organic chemistry. Part X. Isomeric and homologous chelate rings.” By R. C. MENZIES and A. R. P. WALKER.
- “The dipole moments of (a) cyclohexa-1:4-dione, (b) cyclopentadienebenzoquinone, (c) benzoquinone, (d) carbon suboxide, and (e) carbonyl chloride.” By (MRS.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.
- “Some Walden inversion reactions of the *p*-toluenesulphinic and the *p*-toluenesulphonic esters of ethyl *d*- β -hydroxy- β -phenylpropionate.” By J. KENYON, H. PHILLIPS, and G. R. SHUTT.
- “Studies on starch. Part V. Lintner's ‘isomaltose.’ The so-called β -glucosidomaltose and the maltodextrins.” By A. R. LING.
- “Studies on starch. Part VI. Starch granules. The amyloses and the hexosans (dextrins).” By A. R. LING, W. A. CARTER, and J. W. GREEN.
- “Studies on starch. Part VII. A polyamylose. (Baker's α -amylodextrin).” By A. R. LING, W. A. CARTER, and R. S. POTTER.
- “Studies on starch. Part VIII. A polyhexosan. (The so-called stable dextrin of H. T. Brown).” By A. R. LING and W. A. CARTER.
- “The thermal dissociation of the compounds of arylalkylphosphines and carbon disulphide.” By W. C. DAVIES and W. P. WALTERS.
- “The constitution of some additive compounds of tertiary phosphines.” By W. C. DAVIES.
- “The kinetics of the reaction between oxygen and sulphur. Part I. Aspects of the reaction at 240–280°.” By L. A. SAYCE.
- “The constitution of dimeric keten.” By W. R. ANGUS, A. H. LECKIE, (MRS.) C. G. LE FÈVRE, R. J. W. LE FÈVRE, and A. WASSERMANN.
- “The interaction between aromatic diamines and ethyl acetoacetate.” By O. G. BACKERBERG.
- “Ring closures of derivatives of 2-aminostyrene.” By T. W. J. TAYLOR and (MISS) P. M. HOBSON.
- “The azo group (-N=N-) as a chelating group. Part I. Metallic derivatives of *o*-monohydroxyazo-compounds.” By (MISS) M. ELKINS and L. HUNTER.
- “Some metallic derivatives of 6-nitroso-3-methoxy- and of 5-chloro-6-nitroso-3-methoxyphenol.” By H. H. HODGSON and W. E. BATTY.
- “Derivatives of 4-bromo- and 4:6-dibromo-3-methylaniline.” By G. D. PARKES and E. D'A. BURNEY.
- “The photochemical decomposition of methylamine and ethylamine.” By H. J. EMELÉUS and L. J. JOLLEY.
- “Primary photochemical reactions. Part VIII. The quantum yield of the photolysis of methyl *n*-butyl ketone.” By B. M. BLOCH and R. G. W. NORRISH.
- “The unsaturation and tautomeric mobility of heterocyclic compounds. Part VII. Selenazole derivatives.” By C. HASAN and R. F. HUNTER.
- “The problem of chemical linkage. Part II. The absorption spectra of some dipole associations and some further remarks on the application of wave mechanics to the problem of valency.” By R. F. HUNTER and R. SAMUEL.
- “Estimation and purification of β -naphthylamine in the presence of α -naphthylamine, and the properties of certain of their sulphonamides.” By H. H. HODGSON and E. W. SMITH.
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- “A reaction of certain diazosulphonates derived from β -naphthol-1-sulphonic acid. Part XIII. Preparation of benzphenylhydrazide-2- β -acrylic acid, *iso*indolinone, *iso*indolinopyrazolidocoline, phthalazine, phthalazone, and benzylenebenziminazole derivatives from *o*-nitroaniline, and 4- and 5-chloro-*o*-nitroaniline.” By F. M. ROWE, W. C. DOVEY, B. GARFORTH, (MISS) E. LEVIN, J. D. PASK, and A. T. PETERS.
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- “A reaction of certain diazosulphonates derived from β -naphthol-1-sulphonic acid. Part XIV. Preparation of 1 : 4-diketo-3-(nitroaryl)-tetrahydrophthalazines or 4-keto-1-hydroxy-3-(nitrosoaryl)-3 : 4-dihydrophthalazines and related compounds.” By F. M. ROWE, J. G. GILLAN, and A. T. PETERS.
- “Studies in polymorphism. Part III. The linear velocity of the transformation of α - to β -*o*-nitroaniline.” By N. H. HARTSHORNE, G. S. WALTERS, and (in part) W. O. M. WILLIAMS.
- “The condensation of phthalic anhydride with *sym*-*octa*-hydrophenanthrene.” By E. DE B. BARNETT, N. F. GOODWAY, and C. A. LAWRENCE.
- “Complex thio-salts of mercury, cadmium, and zinc.” By W. H. MILLS and R. E. D. CLARK.
- “The dissociation constants of organic acids. Part XIII. The primary and secondary dissociation constants of some cyclic 1 : 1-dicarboxylic acids.” By W. L. GERMAN, G. H. JEFFERY, and A. I. VOGEL.
- “Velocities of reaction of substituted benzyl chlorides in two reactions of opposed polar types.” By G. M. BENNETT and B. JONES.
- “The velocities of reaction of some β -arylethyl chlorides with potassium iodide.” By G. BADDELEY and G. M. BENNETT.
- “The dissociation constants of the mono-halogenated anilines and phenols.” By G. M. BENNETT, G. L. BROOKS, and S. GLASSTONE.
- “The polar effects of the halogens in aromatic combination.” By G. BADDELEY, G. M. BENNETT, S. GLASSTONE, and B. JONES.
- “Dielectric polarisation and molecular compound formation in solution. Part I. The structure of the compounds of ethers with some halogeno-methanes and -ethanes. Part II. The structures of the compounds of acetone, quinoline, and dioxan with some halogenomethanes.” By D. P. EARP and S. GLASSTONE.
- “The ternary system aluminium oxide, sulphur trioxide, water.” By H. G. DENHAM and E. S. BORTHWICK.
- “The constituents of natural phenolic resins. Part III. Synthesis of dehydro-“sulphite-liquors lactone” dimethyl ether and some observations on the structure of podophyllotoxin.” By R. D. HAWORTH, T. RICHARDSON, and G. SHELDRICK.
- “Addition of hydrogen bromide to triple and to double bonds. Undecynoic, undecenoic, and 10 : 11-epoxyundecoic acids.” By P. L. HARRIS and J. C. SMITH.
- “Influence of poles and polar linkings on the course pursued by elimination reactions. Part XXIII. Stable derivatives of the tervalent-carbon compound of Ingold and Jessop.” By E. D. HUGHES and K. I. KURIYAN.

- "Substitution in polycyclic systems. Part I. The nitration of fluorene and 9-bromo-fluorene." By S. V. ANANTAKRISHNAN and E. D. HUGHES.
- "The caryophyllenes. Part III." By G. R. RAMAGE and J. L. SIMONSEN.
- "Note on Snitter's camphenilene." By G. GRATTON and J. L. SIMONSEN.
- "A synthesis of *dl*-piperitone (*dl*- Δ^1 -*p*-menthen-3-one)." By J. WALKER.
- "Properties of the oxides of nitrogen. Part II. The binary system N_2O_3/H_2O ." By T. M. LOWRY and J. T. LEMON.
- "Properties of the oxides of nitrogen. Part III. The pseudo-binary system N_2O_4/H_2O ." By T. M. LOWRY and J. T. LEMON.
- "Properties of the oxides of nitrogen. Part IV. Formation of two liquid layers in mixtures of nitrogen peroxide and water." By T. M. LOWRY, E. LLOYD, and W. V. LLOYD.
- "An improved preparation of diacetoneglucose." By D. J. BELL.
- "The mechanism of aromatic side-chain reactions with special reference to the polar effects of substituents. Part IV. The polar characteristics of alkyl groups." By J. W. BAKER and W. S. NATHAN.
- "The mechanism of aromatic side-chain reactions with special reference to the polar effects of substituents. Part V. The effects of *p*-alkyl substituents on prototropy in the methyleneazomethine system." By J. W. BAKER, W. S. NATHAN, and C. W. SHOPPEE.
- "Studies in graphite formation. Part I. The estimation of graphite." By A. E. BALFOUR and H. L. RILEY.
- "Unsaturated acids of natural oils. Part IV. The highly unsaturated acid of *Telfairia Occidentalis*." By E. H. FARMER and E. S. PAICE.
- "Unsaturated acids of natural oils. Part V. α - and β -Licanic acids." By W. B. BROWN and E. H. FARMER.
- "Sulpharsphenamine. A new method of preparation." By W. J. C. DYKE and H. KING.
- "The halogenation of phenolic ethers and anilides. Part V. Alkyl and ω -substituted alkyl ethers." By B. JONES.
- "The halogenation of phenolic ethers and anilides. Part VI. Benzyl and substituted benzyl ethers." By B. JONES.
- "Apparent cases of liquid crystal formation in *p*-alkoxybenzoic acids." By B. JONES.
- "The iodoxy-group and its relations." By I. MASSON, E. RACE, and (in part) F. E. POUNDER.

ADDITIONS TO THE LIBRARY.

I. Donations.

ALUMINUM COMPANY OF AMERICA. Chemical analysis of aluminum. New Kensington, Pa. 1935. pp. 83. 50c. (Recd. 11/7/35.)

From the Director.

ANGERER, ERNST VON. Apparate und Methoden der Spektroskopie. (Handbuch der Experimentalphysik, 21, pp. 205-396.) Leipzig 1927. ill. From Dr. H. G. de Laszlo.

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BROWN, SAMUEL. Lectures on the atomic theory and essays scientific and literary. 2 vols. Edinburgh 1858. pp. xii + 357, iv + 384. From Dr. Alexander Scott, F.R.S.

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FRIEND, JOHN NEWTON. A text-book of physical chemistry. Vol. II. Principles involved in chemical reactivity. London 1935. pp. xii + 483. ill. 24s. net. (Recd. 29/6/35.)

From the Author.

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INSTITUT INTERNATIONAL DE CHIMIE SOLVAY. Cinquième Conseil de Chimie. Rapports et discussions relatifs à l'oxygène, ses

réactions chimiques et biologiques. Paris 1935. pp. xvi + 355. 75 fr. (*Recd.* 6/6/35.)

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INSTITUTION OF PETROLEUM TECHNOLOGISTS. Petroleum: twenty-five years retrospect, 1910-1935. London 1935. pp. xx + 219. ill. 7s. 6d. net. (*Recd.* 2/7/35.)

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LONDON COUNTY COUNCIL. Oxidation-reduction potentials in bacteriology and biochemistry. By L. F. HEWITT. 3rd edition. London 1935. pp. 90. ill. 2s. net. (*Recd.* 20/6/35.) From the London County Council.

LUCAS, ALFRED. Ancient Egyptian materials and industries. 2nd edition. London 1935. pp. xii + 447. 16s. net. (*Recd.* 10/7/35.)

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MARTIN, ARTHUR J. The work of the sanitary engineer. London 1935. pp. xvi + 472. ill. 16s. net. (*Recd.* 6/9/35.) From the Publishers: Messrs. Macdonald & Evans.

MAUGUIN, CH. La structure des cristaux déterminée au moyen des rayons X. Paris 1924. pp. 281. ill.

From Dr. H. G. de Laszlo.

MAUMENÉ, E. J. Théorie générale de l'action chimique. Paris 1880. pp. viii + 536. ill. From Dr. Alexander Scott, F.R.S.

MENSCHUTKIN, B. N. Chemistry. 2nd edition. Leningrad 1935. pp. 592. ill. [In Russian.] (*Recd.* 7/10/35.) From the Author.

MORTON, R. A. The application of absorption spectra to the study of vitamins and hormones. London [1935]. pp. 70. ill. 10s. net. (*Recd.* 11/10/35.)

From the Publishers: Messrs. Adam Hilger.

SUTTON, FRANCIS. A systematic handbook of volumetric analysis. 12th edition. By A. D. MITCHELL. London 1935. pp. xvi + 631. ill. 35s. net. (*Recd.* 20/9/35.)

From Mr. F. Napier Sutton.

II. By purchase.

NAPHTALI, M. Chemie, Technologie und Analyse der Naphthensäuren. Nachtrag 1927-33. Naphthensäuren und Naphthensulfosäuren. Stuttgart 1934. pp. iv + 52. M. 2.50. (*Recd.* 31/7/35.)

WYCKOFF, RALPH W. G. The structure of crystals. Supplement of 1930-34 to the 2nd edition. (American Chemical Society Monograph Series.) New York 1935. pp. 240. ill. \$6. (*Recd.* 26/9/35.)

III. Pamphlets.

(a) Presented by Dr. H. G. de Laszlo.

AMERICAN PETROLEUM INSTITUTE. A report on fundamental research in petroleum. New York 1932. pp. 56. ill.

BIEDERMANN, H. Recherches sur la compression et la décomposition de l'oxyde d'azote. Paris 1926. pp. 27. ill.

BRETAGNE, ROBERT. Synthèses de bases phénylées et bi-phénylées. Lausanne 1925. pp. 31.

EBERT, ERICH. Optische Untersuchungen ungesättigter organische Verbindungen. Weida i Th. 1910. pp. 99. ill.

HONEGGER, PAULA. Untersuchungen über die Absorption ultraroter Strahlen durch organische Substanzen im flüssigen Zustande. Zürich 1926. pp. 96. ill.

KEMP, MARIA. Die ultraviolette Bandenabsorption einiger Biderivate des Benzols. Madgeburg 1916. pp. 36.

KEUNING, KLAAS JANNES. Dithiaspiroheptaan. Groningen 1934. pp. viii + 92.

LARDY, GUILLAUME C. Spectres d'absorption ultra-violets de quelques cétènes et de leurs dimères. Paris [1923]. pp. vi + 87. ill.

LEBEDEF, PIERRE. Pression de la lumière. Translated from the Russian by T. KOUSMINE. Paris 1926. pp. 71. ill.

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POOL, GIJSBERTUS MARINUS. Quantitative absorptiebepaling in het ultraviolet. Utrecht 1925. pp. vi + 52. ill.

PRETZ, KARL. Die ultraviolette Absorption einiger Diderivate des Benzols. Bonn 1915. pp. 40.

PRUPPACHER, HANS. Recherches sur le cracking et la chloruration de ses produits. Genève 1925. pp. 36. ill.

SCHMITT, HANS. Die elektrische Oxydation des Aluminiums. (From the *Hauszeit. V.A.W.u. Erftwerk Aluminium*, 1932, 4.)

SCHNORF, PAUL. Recherches sur l'ozonation des hydrocarbures gazeux non saturés. Paris 1928. pp. 108. ill.

SCHOU, SVEND AAGE. Structure et activation des molécules des aldéhydes aliphatiques, analysées par les spectres d'absorption. Paris 1928. pp. vi + 128. ill.

SEWIG, RUDOLF. Die lichtelektrischen Eigenschaften von Thalliumzellen. (From the *Z. techn. Physik*, 1930, 11.)

[UNITED STATES.] National Safety Council. Final report of the Committee, Chemical and Rubber Sections on benzol. 1926. pp. 128. ill.

WALTER, EMIL. Die Absorptionsbandenspektren von Gasen und Dämpfen. Zürich 1924. pp. 83. ill.

WASER, ERNST. Ueber Derivate des Cyclooctans. Zürich 1911. pp. 94. ill.

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ALTMAN, REINOUT FERDINAND ALEXANDER. Contribution à l'étude des médicaments de synthèse contre la malaria. Delft 1935. pp. 182. ill.

AUSTRALIA, COMMONWEALTH OF. *Council for Scientific and Industrial Research*. Pamphlet No. 55. The selection, preservation, distribution, and identification of Australian pole timbers. By J. E. CUMMINS and H. E. DADSWELL. Melbourne 1935. pp. 79. ill.

— — Pamphlet No. 57. Tests of the efficacy of the oxy-acetylene scouring and charring process for sterilising partly decayed poles. By J. E. CUMMINS. Melbourne 1935. pp. 43. ill.

BEUKEMA, TAMMO RIENKO ANTON. De ontwikkeling van het begrip valentie. Leiden 1935. pp. viii + 159. ill.

BILLITER, JEAN RENÉ. L'action de l'ammoniac et des amines sur les éthers glycidiques. Paris 1935. pp. 99.

BOEHMER, JAN WILLEM. Aliphatische isocyanaten en hun omzetting in N.aryl-N'. alkylurea. Leiden 1935. pp. xii + 121. ill.

BRITISH SCIENCE GUILD. Gas defence. By J. DAVIDSON PRATT. London 1935. pp. 14.

BRITISH STANDARDS INSTITUTION. British standard specifications, No. 604—1935. Graduated measuring cylinders.

— — No. 605—1935. Crow receivers.

— — No. 611—1935. Petri dishes.

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— — No. 616—1935. Sampling of coal tar and its products.

— — No. 619—1935. Laboratory incubator, water bath, and oven thermometers.

— — No. 622—1935. Cyanides (classes A and B) suitable for electroplating. London 1935. pp. 19.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Review of oxidation and scaling of heated solid metals. London 1935. pp. viii + 104. ill.

— *Building Research*, Bulletin No. 6. The prevention of corrosion of lead in buildings. 2nd edition. By F. L. BRADY. London 1935. pp. iv + 4. ill.

— *Fuel Research*. Technical Papers Nos. 40 and 41. The hydrogenation-cracking of tars. Part I. Preliminary experiments. Part II. The preparation of a catalyst. London 1935. pp. viii + 107, vi + 17. ill.

DUBOIS, PIERRE. Contribution à l'étude des oxydes du manganèse. Paris 1935. pp. iv + 72. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Bulletin No. 2. Solder. London 1935. pp. 52. ill.

— Technical Publications. Series B. No. 2. Equilibrium diagrams of binary alloys of tin. By E. S. HEDGES and C. E. HOMER. London 1935. pp. 90. ill.

— — Series D. No. 2. Black spots on tin and tinned ware. By SVEN BRENNERT. London 1935. pp. 27.

KLEEF, GERRIT VAN. Derivaten van 2,4-dien 2,4,5-trimethylaniline. Leiden 1935. pp. viii + 135.

LONDON SHELLAC RESEARCH BUREAU. Technical Paper No. 2. Identification and analysis of lac. By R. BHATTACHARYA. London 1935. pp. 28.

— Technical Papers Nos. 3 and 4. Fundamental physical properties of lac. Parts I and II. By LAL C. VERMAN. London 1935. pp. 28, 20. ill.

— Technical Paper No. 5. Direct liquid extraction process for pure lac resin. By LAL C. VERMAN and R. BHATTACHARYA. London 1935. pp. 30. ill.

MEDICAL RESEARCH COUNCIL. Special Report Series, No. 201. The determination of iodine in biological substances. By C. O. HARVEY. London 1935. pp. 43. ill.

MINES DEPARTMENT. *Safety in Mines Research Board*. Paper No. 92. The deterioration of haulage ropes in service. By S. M. DIXON and M. A. HOGAN. London 1935. pp. iv + 32. ill.

— — Paper No. 93. The ignition of firedamp by compression. By H. B. DIXON and J. HARWOOD. London 1935. pp. 23. ill.

SCARLATA, GIUSEPPE. Il sesso negli atomi. Palermo 1935. pp. 13.

SIDDQUI, RAFAT HUSSAIN. Chemical examination of the roots of *Rauwolfia Serpentina* (Benth.) with special reference to its alkaloidal constituents. Delhi 1934. pp. viii + 40. ill.

— Studies in the alkaloids of *Holarrhena Antidysenterica*. Delhi 1934. pp. [17].

UNITED STATES. *Department of Agriculture*. Circular No. 56. Methods for determining the hydrogen-ion concentration of soils. Revised edition. By E. F. SNYDER. Washington 1935. pp. 47. ill.

— — Technical Bulletin No. 471. Chemical studies of infertile soils derived from rocks high in magnesium and generally high in chromium and nickel. By W. O. ROBINSON, GLEN EDGINGTON, and H. G. BYERS. Washington 1935. pp. 28.

UNITED STATES. *Department of Agriculture*. Technical Bulletin No. 482. Selenium occurrence in certain soils in the United States. By HORACE G. BYERS. Washington 1935. pp. 47.

[UNITED STATES] NATIONAL FIRE PROTECTION ASSOCIATION. *Committee on Flammable*

liquids. Fire hazard properties of certain flammable liquids, gases and volatile solids. Revised edition. Boston, Mass. 1935. pp. 44.

ZAAIJER, WILLEM HENDRIK. De snelheid van de benzilzuur-omzetting en van de reactie van Cannizzaro. Leiden 1935. pp. xiv + 125.

FORTHCOMING MEETINGS OUTSIDE LONDON.

BIRMINGHAM.

Monday, December 2nd, 1935, at 5 p.m. Lecture on "Alkaloids—General Ideas and Methods," by Professor G. Barger, D.Sc., F.R.S.

Monday, December 9th, 1935, at 5 p.m. Lecture on "The Decomposition of Molecules by Light," by Dr. R. G. W. Norrish, B.A.

These lectures are held in conjunction with the University of Birmingham Chemical Society in the Chemistry Lecture Theatre of the University at Edgbaston.

GLASGOW.

Friday, December 6th, 1935. Ramsay Chemical Dinner at the Central Hotel at 7 p.m. The Chairman, Sir Thomas Holland, K.C.S.I., K.C.I.E., F.R.S., Principal and Vice-Chancellor of the University of Edinburgh, will propose "The Profession," to which Dr. J. F. Tocher will reply. Professor F. A. Paneth will reply to the toast of "Our Guests." Tickets price 14s. 6d. each can be obtained from Mr. Hugh C. Moir, 116, Paton Street, or from Dr. A. B. Crawford, Royal Technical College, 204, George Street.

LIVERPOOL.

Tuesday, December 10th, 1935, at 6 p.m. in the Chemistry Lecture Theatre of the University. Lecture on "Formation of Anthocyanins in Plants," by Professor R. Robinson, D.Sc., F.R.S.

MANCHESTER.

Tuesday, November 26th, 1935, at 4.30 p.m. Joint meeting with the University of Manchester Chemical Society. Lecture on "The Calcification of Animal Tissues," by Professor R. Robison, D.Sc., F.R.S., in the Chemistry Lecture Theatre of the University.

Friday, December 6th, 1935, at 2.30 p.m. in the College of Technology and at 7 p.m. in the Engineers' Club, Albert Square. Joint meeting with the Food Group of the Society of Chemical Industry and the Manchester Section of the Society of Chemical Industry. A symposium on "Micro-Organisms and Foodstuffs."

NEWCASTLE AND DURHAM.

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

Friday, November 8th, 1935, at 6.30 p.m. Lecture on "The Synthesis and Biological Effects of Carcinogenic Hydrocarbons," by Professor J. W. Cook, D.Sc., Ph.D.

Friday, December 6th, 1935, at 6.30 p.m. Lecture by Professor J. E. Lennard-Jones, D.Sc., F.R.S. (title to be announced).

NORTH WALES.

Friday, November 1st, 1935, at 5.30 p.m. in conjunction with the University College Chemical Society in the Chemistry Lecture Theatre, University College, Bangor. Lecture on "Thermodynamics and Reaction Velocity," by Professor M. Polyani, Ph.D., M.D.

SHEFFIELD.

Friday, November 29th, 1935, at 5.30 p.m. in the Chemistry Lecture Theatre of the University. Lecture on "Some Modern Views on Chemical Reaction Velocity," by Professor M. Polyani, Ph.D., M.D.

SOUTH WALES.

Friday, November 8th, 1935, at 6 p.m. Joint meeting with the University College of Swansea Chemical Society, in the Department of Chemistry, University College, Swansea. Lecture on "Recent Investigations in the Chemistry of Gold," by Professor C. S. Gibson, O.B.E., M.A., Sc.D., F.R.S.

Friday, November 22nd, 1935, at 5 p.m. in the Department of Chemistry, University College, Cardiff. Discussion on "Some Problems of Sugar Chemistry in relation to Biology." Speakers :—Professor W. N. Haworth, D.Sc., F.R.S., will deal with starch and glycogen, Dr. E. L. Hirst, M.A., F.R.S., with ascorbic acid and its analogues, Dr. W. T. J. Morgan with polysaccharides in immunity, Dr. J. H. Quastel with the rôle of carbohydrates in fermentation and bacterial reactions, and Dr. J. Pryde with uronic acids, with special reference to detoxication problems.

Tea may be had at the Refectory, Students' Union, and an informal dinner—at a moderate price—will be held at the New Continental Café, Queen Street, at 7.30, the meeting being suitably interrupted for this dinner. The second session will begin at 8.45 p.m.

FORTHCOMING MEETINGS IN LONDON.Thursday, November 7th, 1935.

Ordinary Scientific Meeting.

Thursday, November 14th, 1935.

Brauner Memorial Lecture, by Dr. S. I. Levy.

Thursday, November 21st, 1935.

Discussion on "Some Aspects of the Interaction between Gases and Solids," to be opened by Professor E. K. Rideal, M.B.E., D.Sc., F.R.S., and followed by Dr. J. K. Roberts and Dr. R. M. Barrer.

Thursday, December 5th, 1935.

Ordinary Scientific Meeting.

Thursday, December 19th, 1935.

Ordinary Scientific Meeting.

ANNUAL CHEMICAL DINNER.

The next Annual Chemical Dinner will be held at the Wharnccliffe Rooms, Great Central Hotel, Marylebone, N.W.1, on Tuesday, December 17th, 1935, at 7 for 7.30 p.m.

Application for tickets, price 12s. 6d. each for lady or gentleman, should reach Mr. F. A. Greene, The Chemical Club, 2, Whitehall Court, London, S.W.1, by Tuesday, 10th December, 1935.

INSTITUTE OF FUEL.

A meeting of the Institute of Fuel will be held in the Lecture Theatre of the Institution of Electrical Engineers on Friday, November 22nd, 1935, at 6 p.m., when a paper entitled: "The Development of Coal Hydrogenation by the Imperial Chemical Industries, Ltd." by Mr. Kenneth Gordon, will be read. Fellows are invited to attend the meeting, and advance proofs can be obtained from the Secretary of the Institute of Fuel, 58, Victoria Street, S.W.1.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

A Joint Meeting with the Newcastle-on-Tyne section of the Society of Chemical Industry was held on Friday, 18th October, 1935, at 7.30 p.m., in the Chemistry Lecture Theatre, Armstrong College. The following papers were read :

- “ The concentration of deuterium in standard water.” By G. OGDEN.
 “ The concentration of deuterium by electrolysis.” By G. OGDEN.
 “ A micropyknometer method of density determination.” By G. R. CLEMO and A. MCQUILLEN.
 “ Octadeuteronaphthalene.” By G. R. CLEMO and A. MCQUILLEN.
 “ Studies in graphite formation. Part I. The estimation of graphite.” By A. E. BALFOUR and H. L. RILEY.
 “ Kinetics of the reaction between sulphur and ammonia.” By R. P. COOK and P. L. ROBINSON.

Ordinary Scientific Meeting, Thursday, November 7th, 1935, at 8 p.m., Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., 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.
Samuel Cox Hooker	1892	October 20th.
Arrigo Mazzuchelli	1932	January 7th.

It was announced that :—

1. The Council had appointed the following representatives :—

Bureau of Chemical Abstracts : Mr. F. P. Dunn, Mr. A. J. Greenaway, Dr. J. T. Hewitt, and Professor S. Sugden, together with Mr. Emile Mond (Treasurer) ex-officio.

Federal Council for Chemistry : Sir William J. Pope, Professor S. Sugden, and Professor J. F. Thorpe.

2. Imperial Chemical Industries, Ltd., had sent a contribution of £100 to the Publications Fund.

3. The late Dr. H. M. Atkinson had bequeathed the sum of £100 to the Research Fund.

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

Arthur James Colville Aikman, B.Sc., Treadaway House, Flackwell Heath, High Wycombe.
 Walter John Allum, B.Sc., A.R.C.S., 130, Southfield Road, Chiswick, W. 4.
 George Edward Charlish, B.Sc., The Elms, Elms Grove, Loughborough.
 Ernest Edward Connolly, 4, Plantation Drive, Anlaby Park, Hull.
 Noel William Cusa, Ph.D., 2, Brunswick Walk, Cambridge.
 Raymond Ernest Fairbairn, B.Sc., 52, Vernon Road, Seven Kings.
 John Albert Gardner, B.Sc., A.R.C.S., 38, Hollicondane Road, Ramsgate.
 Rowland Hebden, M.Sc., 45, Castle Road, Sandal, Wakefield.
 Ralph Robert Lynce, B.Sc., 198, Douglas Road, Acocks Green, Birmingham.
 Juan Madinaveitia, 5, Rillbank Terrace, Edinburgh.
 Laurence Seymour May, Otterden Rectory, Faversham.
 Reginald Robert Melhuish, Ph.D., 31, Cotham Vale, Bristol 6.

Reginald Conrad Milner, 27, Wheeldon Avenue, Derby.
 William Hopper Pedelty, B.Sc., 39, Deane Road, Fairfield, Liverpool 7.
 Ervin Péteri, 20, Mardale Crescent, Edinburgh 10.
 Frederick Potts, B.Sc., B.Sc.Tech., 161, Causeway Head Road, Dore, near Sheffield.
 Mowbray Ritchie, Ph.D., D.Sc., Chemistry Department, The University, Sheffield.
 Edward Arthur Rogerson, 699, Beaufort Street, Mount Sawley, Western Australia.

and for the second time in favour of 47 candidates.

The following papers were read :

- “The iodoxy-group and its relations.” By I. MASSON, E. RACE, and (in part) F. E. POUNDER.
 “The mechanism of aromatic side-chain reactions with special reference to the polar effects of substituents. Parts IV and V.” By J. W. BAKER, W. S. NATHAN, and C. W. SHOPPEE.
 “The constitution of the purine nucleosides.” By A. G. OGSTON.

Extra Meeting, held at Burlington House on Thursday, November 14th, 1935, at 8 p.m., Professor N. V. SIDGWICK, C.B.E., M.A., D.Sc., F.R.S., President, in the Chair.

After briefly introducing the lecturer, Dr. S. I. Levy, the PRESIDENT called on him to deliver the Brauner Memorial Lecture. At the conclusion of the lecture, a vote of thanks to Dr. Levy was proposed by Mr. William Macnab and seconded by Dr. J. G. F. Druce. This was carried with acclamation and acknowledged by the Lecturer.

Ordinary Scientific Meeting, Thursday, November 21st, 1935, 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.
Harry Bowes	1894	12th November.
George Aleck Crocker Gough.....	1926	8th November.

It was announced that the Council, at its meeting held that afternoon, had proposed the following as Honorary Fellows, and that a ballot for their election would be held at the next Ordinary Scientific Meeting on December 5th, 1935 :

Professor Johannes Nicolaus Brønsted (Copenhagen).
 President James Bryant Conant (Harvard, U.S.A.).
 Professor Dr. Georg von Hevesy (Copenhagen).
 Professor Dr. Leopold Ruzicka (Zürich).
 Professor Dr. Gustav Tammann (Göttingen).

The following were formally admitted Fellows of the Society :—G. Van Praagh, John Bradley, J. K. Roberts, and W. G. S. Parker.

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

George Baddeley, M.Sc., Ph.D., College of Technology, Manchester.
 William Frank Bennett, A.R.C.S., A.I.C., 12, Chalk Pit Hill, Chatham.
 Carl William Brandt, M.Sc., c/o Dominion Laboratory, Sydney Street, Wellington.
 Thomas Elliss Clarke, B.Sc., A.I.C., 18, Oak Bank Avenue, Moston, Manchester.
 Peter Gaubert, A.R.C.S., 36, Oxhey Road, Oxhey, Herts.
 Lionel Arthur Moignard, B.A., Jesus College, Oxford.
 Peter Livingstone Davies Peill, B.Sc., A.I.C., Chanctonbury, Oakdale, Southgate, N.14.
 Alan Abraham Rawlings, B.Sc., 47, Spencer Place, Leeds 7.
 Geoffrey Vincent Raynor, B.A., 28, Elm Tree Avenue, West Bridgford, Notts.
 Ivau Michael Sharman, 1, Morella Road, Wandsworth Common, S.W.12.

Derrick William Graham Style, Ph.D., King's College, Strand, W.C.2.
John Bernard Wilkinson, Lincoln College, Oxford.

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

Hugh Breen Kinlay, P.O. Box 242, Cape Town.
Garnett Ryland, Prof. M.A., Ph.D., The University, Richmond, U.S.A.
Edgar George Sandler, P.O. Box 2684, Cape Town.
Thomas Francis Doyle, 45, Belgrave Square, Rathmines, Dublin.

Forms of recommendation for Fellowship were read for the second time in favour of 18 candidates.

A Discussion on "Some aspects of the interaction between gases and solids" was opened by Professor E. K. Rideal and followed by Dr. J. K. Roberts and Dr. R. M. Barrer. Dr. H. W. Melville, Dr. R. C. L. Bosworth, Dr. A. Farkas, Professor A. J. Allmand, Professor J. E. Lennard-Jones, and Professor G. Ingle Finch also took part in the discussion.

ANNUAL REPORTS FOR 1935, VOL. XXXII.

Applications for the Annual Reports for 1935, at the reduced price of 5s. 6d., should reach the Assistant Secretary by January 15th, 1936.

THE LIBRARY.

The Library will be closed for the Christmas Holidays from Tuesday, 24th December, to Saturday, 28th December, inclusive.

BINDING CASES FOR THE JOURNAL OF THE CHEMICAL SOCIETY, BRITISH CHEMICAL ABSTRACTS "A," AND INDEX TO ABSTRACTS "A" AND "B."

Cases for binding the above in four volumes to the year, viz. Journal, two volumes, Abstracts "A," one volume, and Index to Abstracts "A" and "B," one volume (maroon or blue cloth), at 7s. 6d. per set. Postage 6d. (inland), 10d. (foreign).

Cases for the Journal only, two volumes to the year, at 3s. 9d. per set. Postage 6d. (inland or foreign).

*Cases for the Abstracts "A" and Index to Abstracts "A" and "B," at 3s. 9d. per set. Postage 6d. (inland or foreign).

Orders for these cases, together with remittance to cover cost of same should be sent to Messrs. Gurney & Jackson, 33, Paternoster Row, London, E.C. 4.

* These cases can be supplied separately at 2s. per case, postage 4d. each case.

BRITISH STANDARDS INSTITUTION.

A copy of a draft specification dealing with the British Standard Method for the Determination of Viscosity in Absolute Units (C.G.S. Units) has been received from the British Standards Institution for technical comment and criticism. The copy has been placed in the Library.

LIST OF RESEARCH APPARATUS IN THE POSSESSION OF THE SOCIETY.

(Grantees desiring to borrow this should apply to the Secretary of the Research Fund Committee.)

Absorption vessel.

Ammeter, 0—2 amps. (Gambrell Bros.)

Balance (Oertling) 1875, presented by Dr. G. B. Longstaff.

Condenser, variable, with vernier fine adjustment. (Cambridge Instrument Co.)

Flow meter (for hydrogen), privately made, dated 1924.
 Galvanometer, simple moving coil type, maker unspecified.
 Glassware (miscellaneous) for setting up voltaic cells with amalgam electrodes.
 Microscope (Universal Reading) Pye.
 Oxygen regulator (for fitting to a cylinder of compressed oxygen to regulate the delivery of gas).
 Perkin triangle, pyrex.
 Quartz distilling flask.
 Quartz ozonising apparatus.
 Resistance furnaces (2) : (W. C. Heraeus), 230 volts, 9 amps. ; (C. W. Cook, Manchester.)
 Rosenhain and Melsom potentiometer, with lock and key. (Cambridge Instrument Co.)
 Rotary stillhead and centrifuge drum.
 Slide-wire bridge, drum wound pattern. (Cambridge Instrument Co.)
 Standard cell.
 Stop watch. (Smith & Son.)
 Telescope mounted at adjustable heights on a solid steel pillar on a tripod base.
 Thermometers (3) : Alcohol, -120 to $+20$ C. in 1 degree ; Mercury, $0-350$ C. in 1 degree ; Mercury, $20-360$ C. in 2 degrees.
 Unipivot galvanometer, $0-3$ amps. (0.01 ohm). (Cambridge Instrument Co.)

List of papers, or abstracts thereof, received between October 17th and November 21st. (This list does not include the titles of papers which have appeared in the Journal, or which have been read at an Ordinary Scientific Meeting.)

- “On the reaction of hydrogen and deuterium with ethylene at a nickel surface.” By T. TUCHOLSKI and E. K. RIDEAL.
- “Complex formation between polynitro-compounds and aromatic hydrocarbons. Part II. The system 2 : 4-dinitro-2'-methyl-diphenyl-6-carboxylic acid-benzene.” By D. LL. HAMMICK and R. B. WILLIAMS.
- “The hydrolysis of arylsulphuric acids. Part I.” By G. N. BURKHARDT, W. G. K. FORD, and E. SINGLETON.
- “The hydrolysis of arylsulphuric acids. Part II. Kinetic considerations.” By G. N. BURKHARDT, A. G. EVANS, and E. WARHURST.
- “Studies in dielectric polarisation. Part XIV. The dipole moments of ethyl, phenyl, α -naphthyl, and β -naphthyl isocyanates.” By E. G. COWLEY and J. R. PARTINGTON.
- “Studies in dielectric polarisation. Part XV. The dipole moments of five-membered nitrogen ring compounds : indole, skatole, carbazole, isatin, phthalimide, and succinimide.” By E. G. COWLEY and J. R. PARTINGTON.
- “Studies on hydrogen cyanide. Part VI. The mechanism of Gattermann's hydrogen cyanide aldehyde synthesis.” By L. E. HINKEL, E. E. AYLING, and J. H. BEYNON.
- “Synthetical experiments in the chromone group. Part XVIII. Demethylation with aluminium chloride.” By K. C. GULATI and K. VENKATARAMAN.
- “The interaction of deuterium and ammonia.” By A. FARKAS.
- “Some experiments on the direct esterification of higher fatty acids with glycerol and with ethylene glycol.” By T. P. HILDITCH and J. G. RIGG.
- “Optical activity in relation to tautomeric change. Part V. Kinetic status of ionic intermediates in prototropy.” By S. K. HSÜ, C. K. INGOLD, and C. L. WILSON.
- “Aconitine. Part I. Oxonitin and the oxidation of aconitine with nitric acid and chromic acid.” By A. LAWSON.
- “The determination of the melting points of organic substances.” By F. E. FRANCIS and F. J. E. COLLINS.
- “The planar configuration of 4-covalent compounds of bivalent copper and nickel.” By E. G. COX, E. SHARRATT, W. WARDLAW, and K. C. WEBSTER.
- “Remarks on the use of the logarithmic-head correction in viscometry.” By G. BARR.

- "The photochemical union of hydrogen and chlorine. Part IV. The reaction at low hydrogen pressures. Effects of wave-length, of temperature, and of traces of oxygen." By H. C. CRAGGS and A. J. ALLMAND.
- "The interaction of diazonium salts with acetonesulphonic acid." By G. D. PARKES and S. J. M. FISHER.
- "The photochemical formation of organic diradicals. Part II. Investigations on anthracene, the fulgides, thiocarbonyl chloride, and their derivatives." By A. SCHÖNBERG.
- "Some substituted *cyclohexyl* nitrites." By L. HUNTER and J. A. MARRIOTT.
- "The (+) and (-) γ -phenyl- α -methylallyl alcohols." By J. KENYON, S. M. PARTRIDGE, and H. PHILLIPS.
- "The lupin alkaloids. Part VIII." By G. R. CLEMO, W. MCG. MORGAN, and R. RAPER.
- "The synthesis of compounds related to the sterols, bile acids, and œstrus-producing hormones. Part VIII." By C. L. HEWETT.
- "Chemotherapeutic studies in the acridine series. Part I. 2:6- and 2:8-Diamino-acridines." By A. ALBERT and W. H. LINNELL.
- "The effect of temperature on the ionisation constants of some dibasic acids." By I. JONES and F. G. SOPER.
- "The isomeric 1-carboxy-4-methyl-, 1-carboxy-3-methyl-, and 1-carboxy-2-methyl*cyclohexane*-1-acetic acids." By R. D. DESAI, R. F. HUNTER, G. KHAN, and G. S. SAHARI.
- "The electrolytic separation of the hydrogen isotopes." By A. J. EDWARDS, H. F. WALTON, R. P. BELL, and J. H. WOLFENDEN.
- "The absorption spectra of 1:2:3-benzotriazoles." By A. K. MACBETH and J. R. PRICE.
- "Imidochlorides. Part III. Reaction of anilide imidochlorides with ethyl sodiomalonnate: synthesis of 2-phenyl-4-hydroxy-3-carbethoxyquinolines." By R. C. SHAH and V. R. HEERAMANECK.
- "Imidochlorides. Part IV. Condensation of anilide imidochlorides with urethanes: a new synthesis of 2-phenyl-4-hydroxyquinolines." By R. C. SHAH and M. B. ICHIPORIA.
- "The preparation of diaryl- α -diketones." By H. H. HATT, A. PILGRIM, and W. J. HURRAN.
- "Alkaline halogenation. The bromination of sodium benzoate." By P. L. HARRIS and J. C. SMITH.
- "Phenyl- ψ -pelletierine." By B. K. BLOUNT.
- "Tetrahydrocarbazoles with substituents in the 7-position." By S. G. P. PLANT and (Miss) K. M. ROGERS.
- "Adsorption at the interface between two fluids. Part I. The adsorption of methylene blue, methyl orange, Congo red, and orange II at benzene-water and chlorobenzene-water interfaces." By C. W. GIBBY and C. C. ADDISON.

FORMS OF RECOMMENDATION FOR FELLOWSHIP. THE BALLOT WILL BE HELD AT THE ORDINARY SCIENTIFIC MEETING ON THURSDAY, DECEMBER 5th, 1935.

AIKMAN, ARTHUR JAMES COLVILLE, Treadaway House, Flackwell Heath, High Wycombe, Bucks. British. Research Chemist. B.Sc., University of St. Andrews. To receive the publications of the Society; to consult and borrow the books in the Society's Library; to attend the meetings, lectures, and discussions organised by the Society. (*Signed by*) W. N. Haworth, Stephen R. H. Edge, E. L. Hirst.

ALLUM, WALTER JOHN, 130 Southfield Road, Chiswick, W. 4. British. Research Student. B.Sc. (Spec.), 1st Class, London; A.R.C.S. Date of birth Jan. 15th, 1916. (*Signed by*) James C. Philip, H. J. T. Ellingham, H. V. A. Briscoe.

AMSDEN, RONALD CEDRIC, "Woodberry," Pilgrim's Way, Reigate, Surrey. British. Student. Date of birth May 31st, 1915. (*Signed by*) Henry Terrey, Alan D. Scott, J. B. Haley.

AVERILL, FREDERICK JOHN, 87, Gillot Road, Edgbaston, Birmingham. British. Research Student. B.Sc. Hons. (Birmingham). Desire to attend the meetings, receive the publications, and use the Library of the Society. Date of birth Aug. 5th, 1913. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

AXAM, RUSSELL DUDLEY, "Evella," 411 Liverpool Road, Ashfield, Sydney, Australia. British. Consulting Analytical Chemist. Chemist, Royal North Shore Hospital of Sydney from March 1929 to February 1931. Chemist, Acme Manufacturing Co., Sydney, from April 1931 to January 1933. Chemist, Forrester Laboratories, Sydney, from April 1933 to July 1934. Private practice consulting chemist from July 1934 to present date. Date of birth April 26th, 1913. (*Signed by*) R. W. Challinor, A. R. Penfold, F. Morrison.

BASHFORD, LESLIE ARTHUR, 1a, Halsmere Road, S.E. 5. English. Research Student. A.R.C.S., B.Sc. (Imperial College, Royal College of Science). Date of birth Sept. 14th, 1914. (*Signed by*) James C. Philip, H. V. A. Briscoe, H. J. Emeléus.

BERGMANN, OTTILIE (née BLUM), Rehovot, Palestine, P.O.B. 26. German. Research Chemist. Ph.D. (Vienna); Mag. pharm. (Vienna). Before, assistant at Berlin University. Work on alkali-organic compounds, aromatic stereochemistry, indene chemistry, intramolecular rearrangements (*Annalen, Berichte*); sexual hormones (*Naturwissenschaften, Chemistry and Industry*). (*Signed by*) Ch. Weizmann, Ernst Bergmann, Harold Davies.

BHATTACHARJEE, JAMES, Veterinary College, Insein, Burma. Indo-Burman. Veterinary Research Officer, Insein, Burma. B.Sc. (Hons. Chem.), Rangoon; M.R.C.V.S. (1st Class Hons. Chem.), London. Undergone training in Petroleum Technology in Burma Oil Company's Experimental Laboratory. Post-graduate training in Parasitology (London), (Cambridge). Interested in Biochemistry and desirous of keeping in touch with its advances. (*Signed by*) Hla Baw, M. C. Thong, B. K. Menon.

BLOCH, BENJAMIN MARKUS, 6, Featherstone Buildings, W.C. 1. Polish. Head of the Physics Dept. of the Daniel Sieff Research Institute, Rehovoth (Palestine). R.Nat.Dr. (Prague). "Abschätzung der Leuchtdauer," *Z. Physik*, 1926, **35**, 894; "Berechnung des Molekulargewichts eines polaren Kolloids," *Physikal. Z.*, 1932, **33**, 767; "L'Influence de la Température sur l'Absorption des liquides organiques," *C.R. de Paris*, 1934, **199**, 713; *J. de Phys.*, 1935, **6**, 154. (*Signed by*) R. G. W. Norrish, T. M. Lowry, W. H. Mills.

BREEZE, VICTOR LAURENCE, "Nestor," Kingston, Lewes, Sussex. British. Student. Date of birth Oct. 31st, 1915. (*Signed by*) James C. Philip, H. I. Harwood, H. J. Emeléus.

BRIDSON-JONES, FRANCIS STEPHEN, 71, Hartington Road, Sefton Park, Liverpool 8. British. Student. B.A. (Cantab). Date of birth April 10th, 1914. (*Signed by*) R. G. W. Norrish, W. H. Mills, T. M. Lowry.

BULCRAIG, WILLIAM RAYMOND, Devonshire Hall, Cumberland Road, Headingley, Leeds 6. British. B.Sc. Hons. Chemistry (Leeds). Student of Hons. Chemistry at Leeds University, 1932-5; Research Student under Professor Dawson, Leeds University Physical Chem. Dept. Date of birth Oct. 24th, 1914. (*Signed by*) Frederick Challenger, J. L. Stoves, R. Spence, W. A. Wightman.

CHARLISII, GEORGE EDWARD, The Elms, Elms Grove, Loughborough, Leics. British. Lecturer in Chemistry and Physics, Loughborough College. B.Sc., 1st Class Hons. in Chemistry, London. 1932. Lecturer in Science at Loughborough College since September 1933. Date of birth March 22nd, 1911. (*Signed by*) George Malcolm Dyson, F. G. Donnan, C. K. Ingold.

CONNOLLY, ERNEST EDWARD, 4, Plantation Drive, Anlaby Park, Hull. British. Research Chemist. 1912-1915, Analyst, Rubber Works and Manufacturing Chemical Works. 1915-1919, N.C.O. gas and chemical warfare in France. 1919-1930, Assistant Research Chemist to Dr. W. R. Ormandy. 1930-present time, Research Chemist, Solvents Manufacture, B.I.S., Hull. (*Signed by*) Ernest C. Craven, W. R. Ormandy, Claude E. C. Nicholls.

CUSA, NOEL WILLIAM, 2, Brunswick Walk, Cambridge. British. Research Chemist. B.Sc., Ph.D. (London University External). "Organic Derivatives of Silicon. Part XLVII. *cyclo*Hexyl and *cyclo*Hexylphenyl Derivatives." Cusa and Kipping, *J.C.S.*, 1932, 2205. "Organic Derivatives of Silicon. Part XLVIII. Steric Effects of the *cyclo*Hexyl Group." Cusa and Kipping, *J.C.S.*, 1933, 1040. "Organic Derivatives of Silicon. Part L. Nitration of Phenyl Ethyl Derivatives." Cusa and Kipping, *J.C.S.*, 1935, 1088. "Magnesium for Grignard Reagents," Cusa and Kipping, *J.S.C.I.*, 1934, 213r. (*Signed by*) F. B. Kipping, Hamilton McCombie, R. G. W. Norrish.

DANIELS, ALAN HENRY, 115, Shirley Road, Southampton. English. Student. B.A. (Oxon.). Date of Birth May 15th, 1914. (*Signed by*) G. D. Parkes, S. G. P. Plant, D. Ll. Hammick.

DAVIDSON, RICHARD ROBERTSON, Seabank Cottage, Promenade, Wallasey, Cheshire. British. Student at Cambridge University. 2nd Class, Nat. Science Tripos, Part I. (*Signed by*) R. G. W. Norrish, E. I. Akeroyd, F. P. Bowden.

DREWITT, JAMES GORDON NAPIER, 12, Cliff Terrace, Kendal, Westmorland. British. Research Student. B.A., Oxford. Date of birth April 3rd, 1914. (*Signed by*) G. D. Parkes, E. Hope, S. G. P. Plant.

DUVEEN, DENIS IAN, 16, Avenue Close, Avenue Road, N.W. 8. British. Past student at Merton College, Oxford. At present student at Battersea Polytechnic. (*Signed by*) J. Kenyon, T. Heap, A. Houssa.

EASTLAND, EDWARD PIERCE, 10, The Terrace, Barnes, S.W. 13. British. Research Chemist. B.Sc., A.R.C.S., D.I.C., Ph.D., Imperial College of Science and Technology. At present occupied in independent research for the "W.L.C." Syndicate, 2, The Abbey Garden, S.W. 1. (*Signed by*) J. B. Anderson, H. J. T. Ellingham, G. Ingle Finch.

EDMONDS, JOHN VERNON, Sycamore House, High Street, Royston, Yorks. English. Schoolmaster. B.Sc. Leeds, Hons. Chemistry, 1931. Diploma in Biology (Leeds), 1935. Diploma in Education (Leeds), 1933. Student in Leeds University Chemistry Dept., 1928-31. Science Master, Royston Technical Institute. Science Master, Royston Senior Boys' School. Associate of Institute of Chemistry, 1931. (*Signed by*) Frederick Challenger, J. W. Baker, C. W. Shoppee, H. Burton.

ELLIS, JOHN CLIFFORD HOLGATE, 44, Clarendon Road, W. 11. British. Articled Clerk to a Solicitor and Chartered Patent Agent. B.A. (Cambridge). Student, Parts I and II, Natural Sciences Tripos, Cambridge. Date of birth Dec. 18th, 1913. (*Signed by*) F. G. Mann, J. B. Whitworth, H. McCombie.

ERRINGTON, KENNETH DAVIS, 81, Iffley Road, Hammersmith, W. 6. British. Research Student. A.R.C.S. (2nd Class Hons.). Date of birth April 9th, 1914. (*Signed by*) R. P. Linstead, S. H. Harper, G. A. R. Kon.

FAIRBAIRN, RAYMOND ERNEST, 52, Vernon Road, Seven Kings, Ilford, Essex. British. Student. B.Sc. Special Chemistry at Queen Mary College (obtained 1935 after two-year course). 1st Class. Date of birth May 29th, 1916. (*Signed by*) J. R. Partington, H. D. K. Drew, H. H. Hatt.

FARRUGIA, PHILIP, 12, Sda. Sperone, Valletta, Malta. Maltese. Assistant Analyst, P.H.D. Malta; B.Sc., M.D. (Malta). Above occupation as Asst. Govt. Analyst, and other connections with Chemistry. (*Signed by*) J. Kenyon, T. Heap, R. H. Coysh, C. W. Davies.

GARDNER, JOHN ALBERT, 38, Hollicondane Road, Ramsgate, Kent. British. Student. B.Sc., A.R.C.S. (Royal College of Science). Date of birth Feb. 5th, 1915. (*Signed by*) G. A. R. Kon, H. N. Rydon, R. P. Linstead.

GOODINGS, ERIC PAUL, 84, Nower Road, Dorking, Surrey. English. At University College, London, reading for B.Sc. Date of birth Dec. 29th, 1916. (*Signed by*) W. Rogie Angus, O. L. Brady, C. L. Wilson.

GREENWOOD, ARTHUR, 1, Dodbrooke Road, W. Norwood, S.E. 27. British. Dyeworks Manager. Formerly Works Chemist at Norwood Dyeworks, West Norwood, S.E. 27. I desire to receive the publications, attend meetings, and to use the Library. (*Signed by*) H. Marcan, Thos. Clark Petrie, E. C. Pickering.

HASKELBERG, LEON, Rehovot, Palestine, P.O.B. 26. Polish. Research Chemist. Dr. ès Sc. (Paris). Work on compounds between amino-acids and polyhydroxy-compounds (*Bulletin de la Société chimique de France, Comptes rendus*). Before, research assistant at Jerusalem University. (*Signed by*) Ch. Weizmann, Ernst Bergmann, Harold Davies.

HEBDEN, ROWLAND, "Glenava," 45, Castle Road, Sandal, Wakefield. English. Teacher. M.Sc. (Leeds). For the last six years I have been Science Master at Longcar Central School, Barnsley, where chemistry forms an integral part of the science scheme. I feel that Fellowship of the Society would enable me the better to keep in touch with modern chemical advance. (*Signed by*) H. M. Dawson, R. Whytlaw-Gray, W. Lowson.

HEYNINGEN, WILLIAM EDWARD VAN, Emmanuel College, Cambridge. South African National, and a British Subject by birth. Research Student. M.Sc. (Stellenbosch, South Africa). Served May 1933 to August 1934 as Junior Research Officer in Fuel Research Institute of South Africa. Publications: "Linkage of Chemical Changes in Muscle," *Nature*, **135**, 585, and "Inhibition of Respiration by Cyanide," *Biochem. J.*, in press. (*Signed by*) Marjory Stephenson, E. Friedmann, H. A. Krebs.

HIGGINS, WILLIAM FREDERICK, 291, Queen's Drive, West Derby, Liverpool 13. British. B.Sc. (Hons. Chem.), 1923; M.Sc., 1924; Ph.D., 1927 (Manchester University). 1925-1930, Employed by Safety in Mines Research Board as personal assistant to the late Prof. H. B. Dixon for work in connection with Ignition Phenomena of Gases at various pressures. Work for Medical Research Council on origin of traces of CO in N₂O used for anæsthesia. 1930-

1934, Chief Technical Assistant in Testing Dept. of Chloride Electrical Storage Co. 1934 to present time, Chemist to Liverpool Corporation for Control of Ventilation of New Mersey Tunnel. Publications in *Memoirs of Manchester Literary and Philosophical Society* in collaboration with Prof. H. B. Dixon. (*Signed by*) Colin Campbell, J. B. M. Herbert, Fred Fairbrother.

HILLER, FRITZ, 19, Bleibtreu Strasse, Berlin-Charlottenburg 2, Germany (41, South Grove, Highgate, N. 6). German. Consulting Chemical Engineer. Dr.-Ing. (Technische Hochschule Karlsruhe i. B.). Desire to receive the publications of the Society, to attend the meetings, and to use the Library. (*Signed by*) A. J. Allmand, Samuel Smiles, J. E. Coates.

HOBDAY, MAURICE LEONARD, 2, Overton Court, Wanstead, Essex. British. Paper Mill Manager, directly responsible to the Board of Directors. Research work on the digestion and bleaching of bamboo for paper-making (Original, India, 1927-1931). Routine and experimental work in the manufacture of paper from rag, grass, and wood. Routine and experimental work in the manufacture of paper-boards and special containers. The application of dyes and chemicals to the above processes. (*Signed by*) E. F. Armstrong, J. Davidson Pratt, F. A. Greene.

HURRAN, WALTER JOHN, Chill Mill, Rusthall, Tunbridge Wells, Kent. British. Research Student. B.Sc., London (Special Chemistry). I wish to become a Fellow in order to have the use of the Society's Library and to receive the *Journal*. Date of birth Nov. 1st, 1912. (*Signed by*) H. D. K. Drew, H. H. Hatt, A. Pilgrim.

JONES, CHARLES GEORGE, 80, Fawnbrake Avenue, Herne Hill, S.E. 24. British. Schoolmaster. B.A. (Oxford). One year's research (unpublished) on the oxidation of $\text{Ni}(\text{CO})_4$ in Jesus College Laboratories (for B.Sc. degree), and shall be a Science Master. Date of birth March 20th, 1912. (*Signed by*) A. J. M. Jenner, J. G. M. Bremner, S. E. Woods.

JONES, COLIN RICHARD MORRISON, Torridge, Chislehurst, Kent. English. Research Student (organic). B.Sc., A.R.C.S., Royal College of Science, London, 1935. Date of birth Aug. 3rd, 1914. (*Signed by*) R. P. Linstead, G. A. R. Kon, E. H. Farmer.

JONES, JOHN KENYON NETHERTON, 4, Hawkesley Drive, Northfield, Birmingham. British. Student. Honours B.Sc., Birmingham; M.Sc. (under special regulations); A.I.C. Desire to attend the meetings, receive the publications, and use the Library of the Society. "The Addition of Hydrogen Cyanide to Osones" (with W. N. Haworth, E. L. Hirst, and F. Smith), *J.C.S.*, 1934, 1192. Date of birth Jan. 28th, 1912. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

KITCHEN, HAROLD, "Holmleigh Mount," 278, Birchfield Road, Birmingham 20. British. Research Student, University of Birmingham. B.Sc. (1st Class Hons.), University of Birmingham. Date of birth March 27th, 1913. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

KITCHENER, JOSEPH ALFRED, 34, Ravenslea Road, Balham, S.W. 12. British. Student, University College, London. Inter. B.Sc. 1934. Awarded Goldschmid Scholarship in Science, May 1934. Date of birth June 15th, 1916. (*Signed by*) O. L. Brady, L. F. Gilbert, C. F. Goodeve.

LETTS, HAROLD JOHN ROWLAND, 11, Greenlands Road, Staines, Middlesex. English. Research Student. B.A. (Cantab.). Date of birth Jan. 14th, 1914. (*Signed by*) R. G. W. Norrish, S. G. Foord, C. H. Bamford.

LYNE, RALPH ROBERT, 198, Douglas Road, Acocks Green, Birmingham. British. Research Student. B.Sc., Hons. (Birmingham). Desire to attend the meetings, receive publications, and use the Library of the Society. Date of birth May 2nd, 1913. (*Signed by*) W. N. Haworth, E. L. Hirst, Wm. Wardlaw.

MADINAVEITIA, JUAN, Colonia "El Viso," Guadiana, 17 Madrid. Spanish. Research Student. Licenciado en Farmacia, Doctor en Farmacia (Madrid). "Study of the Decolorated Cyanilidonic Malonic Acid," in collaboration with Antonio Madinaveitia, *Anal. Fis. Quím.*, 1932, 30, 120; "Study of 2-Methyl-1:4-naphthaquinone," *ibid.*, 1933, 31, 750; "Clemmensen's Reduction as a Test for Desmotropite in the Phenols," *ibid.*, 1934, 32, 1100. Date of birth Oct. 25th, 1912. (*Signed by*) George Barger, Alex. R. Todd, Edgar Stedman.

MALCOLM, ANDREW MOIR, 31, Reed Pond Walk, Romford, Essex. British. Student at Cambridge University. Date of birth March 7th, 1914. (*Signed by*) R. G. W. Norrish, F. P. Bowden, E. I. Akeroyd.

MARSHALL, SYDNEY HERBERT, 16, Park Crescent, Armley, Leeds 12. British. Teaching of Chemistry. B.Sc. (Leeds). Date of birth May 18th, 1914. (*Signed by*) Frederick Challenger, L. Ellis, R. Whytlaw-Gray, Constance Higginbottom.

MARTIN, GEORGE THOMAS OSWALD, 136, The Avenue, Tottenham, N. 17. British. Chemical Research Student. B.Sc., Hons. Chemistry (1st class), London University. 2 years' research on dipole moments. Part author of paper "Studies in Dielectric Polarisation. Part XII," by F. Arndt, G. T. O. Martin, and J. R. Partington, *J.C.S.*, 1935, 602. Date of birth May 31st, 1913. (*Signed by*) J. R. Partington, W. H. Patterson, H. D. K. Drew.

MAY, LAURENCE SEYMOUR, Ottenden Rectory, Faversham, Kent. English. Undergraduate at Queen's College, Cambridge. (Taking Natural Sciences Tripos, Part II, in Chemistry, May 1936.) Date of birth July 4th, 1914. (*Signed by*) Laurence E. Price, Philip Bowden, R. G. W. Norrish.

MELHUSH, REGINALD ROBERT, 31, Cotham Vale, Bristol 6. English. Research Assistant, Dept. of Biochemistry, University of Bristol. B.Sc. (Bristol); Ph.D. (Bristol). *J.C.S.*, 1935, 88, 1161 (with D. W. Hill). (*Signed by*) T. Malkin, M. Nierenstein, E. B. Maxted.

MILLER, SAMUEL AARON, 62, Camp Road, Leeds 7. British. Research Chemist. B.A., B.Sc. (Oxford). Miller and Robinson, *J.C.S.*, 1934, 1535. Date of birth April 19th, 1912. (*Signed by*) Robert Robinson, W. A. Wightman, Frederick Challenger, J. W. Baker.

MILNER, REGINALD CONRAD, 27, Wheeldon Avenue, Derby. British. Assistant Chief Chemist. Five years' training in Chemistry (Practical and Theoretical) at the Technical College, Derby. National Certificate in Chemistry. Twelve years' experience in the Research Laboratories of the Macintosh Cable Co., Ltd., Derby. (*Signed by*) Jos. Yates, William C. Smith, C. S. Garnett.

MORRIS, SAMUEL DEREK DRAKE, 63, Coldershaw Road, Ealing, W. 13. British. Physical Chemist. B.A. (Hons.), Cambridge. Publications: (1) "Physico-chemical Studies of Complex Organic Molecules. Part II. Absorption Spectra at Low Temperatures," *P.R.S.B.*, 1934, 115, 274 (with Dr. F. P. Bowden). (2) "The Production of Metal-to-Silica Joints and Vacuum Seals," *J. Sci. Instr.*, 1934, xi, 232. Date of birth Dec. 23rd, 1910. (*Signed by*) R. G. W. Norrish, E. I. Akeroyd, John E. Carruthers.

NORMAN, DAVID JOHN, Ringwould, Cowdray Avenue, Colchester, Essex. British. Chemist. A.I.C., Finsbury Tech. College. (*Signed by*) K. H. Saunders, R. Brightman, E. H. Rodd.

PANKHURST, KENNETH GEORGE ALFRED, 6, Barmouth Road, Wandsworth, S.W. 18. British. Research Assistant. Research Assistant for Imperial Chemical Industries, Ltd. Inter. B.Sc., 1934. I am desirous of receiving the Journal of the Society, also of using its Library, and attending meetings. Date of birth Feb. 7th, 1915. (*Signed by*) F. H. Lowe, N. K. Adam, Charles Dorée.

PEDELTY, WILLIAM HOPPER, 39, Deane Road, Fairfield, Liverpool 7. British. Student, Liverpool University. B.Sc. with Honours (2nd Class) in the School of Biochemistry, Liverpool University. Date of birth Sept. 15th, 1914. (*Signed by*) R. A. Morton, A. McGookin, Wm. Doran.

PÉTERI, ERVIN, 20, Mardale Crescent, Edinburgh 10. Hungarian. Research Student. Dipl. Ing. Chem. E.T.H., Zürich (Switzerland). Date of birth Sept. 6th, 1912. (*Signed by*) G. Barger, Edgar Stedman, W. O. Kermack.

POLLARD, ARTHUR GEORGE, 134, Green Lane, Edgware, Middlesex. English. Student, Royal College of Science, S.W. 7. Desirous of keeping in touch with advances in chemistry by attending the meetings and receiving the publications. Date of birth April 30th, 1914. (*Signed by*) R. P. Linstead, H. J. T. Ellingham, Paul A. Barrett.

POTTS, FREDERICK, 161, Causeway Head Road, Dore (near Sheffield). British. Senior Chemistry Master, Nether Edge Secondary School, Sheffield. B.Sc., Lond. (Chemistry Hons.), 1926; B.Sc. Tech., Manchester, 1921. (*Signed by*) G. M. Bennett, S. Glasstone, Arthur W. Chapman.

RITCHIE, MOWBRAY, Chemistry Department, University of Sheffield. British. Assistant Lecturer, Sheffield University. Ph.D., D.Sc. (Edinburgh). *Proc. Roy. Soc.*, (1930) 123A, 551-579; (1933) 140A, 99-112, 112-125; (1934) 146A, 828-848, 848-866; (1933) 140A, 713-740. *J.C.S.*, 1931, pp. 3112-3125. (*Signed by*) G. M. Bennett, Arthur W. Chapman, Brynmor Jones, J. C. Speakman.

ROBERTS, JOHN CYRIL, Glen-Usk, 4, Dewsland Park Road, Newport, Mon. British. B.Sc. (1st Chem.), B.Pharm.; (London); Ph.C., A.I.C. Assistant Lecturer in Pharmaceutical Chemistry at University College, Nottingham. Assistant Lecturer in Pharmaceutics, Cardiff Technical College. (*Signed by*) F. S. Kipping, H. H. Barber, B. D. Shaw.

ROBERTSON, DONALD, Dell View, Southend Road, Beckenham. British. Chemist. B.A. (Hons. Degree), Cambridge, 2nd Class in Natural Sciences Tripos, Part I, Subjects being chemistry, physiology and botany after two years at Cambridge. Took biochemistry in third

year. Wish to join because I am interested in chemistry. (*Signed by*) W. J. Pope, T. S. Hele, F. G. Mann.

ROGERSON, EDWARD ARTHUR, 699, Beaufort Street, Mt. Lawley, Western Australia. Australian of British parents. Undergraduate at University of Western Australia. Third year B.Sc. Course (Chemistry major subject). Date of birth June 15th, 1913. (*Signed by*) N. T. M. Wilmshire, G. A. Elliott, E. M. Watson.

ROSE, BERNARD ARTHUR, 6, Hillcrest Road, Walthamstow, E. 17. British. Research Student. B.Sc., A.R.C.S. (1st Class), Royal College of Science, London. Date of birth Aug. 8th, 1914. (*Signed by*) H. J. T. Ellingham, James C. Philip, H. V. A. Briscoe.

ROWLAND, GEORGE HENRY, 30, Falkland Road, Hornsey, N. 8. British. Student. Registered student, Institute of Chemistry. Wish to use Library for studies. Date of birth Nov. 10th, 1913. (*Signed by*) H. Lambourne, Gerald R. Shutt, Eric C. Pickering.

SCHWENK, ERWIN, 102, Harrison Street, Montclair, N.J. Austrian. Director of Research, Schering Corporation, Bloomfield, N.J. (U.S.A.). Chemical Engineer, Dr. techn. rerum, Vienna (Austria). (*Signed by*) A. W. Edwards, G. A. Beattie, Sidney C. G. Tweedy.

SCOTT, BARRY ALDERSON, 53, Carleton Road, N. 7. British. Research Student. B.Sc. (London); A.R.C.S. Date of birth Jan. 26th, 1914. (*Signed by*) James C. Philip, H. J. T. Ellingham, H. V. A. Briscoe.

SIMONS, CHARLES, 187, High Road, Tottenham, N. 15. British. Student at the Royal College of Science, S.W. 7. Being desirous of keeping in touch with the latest work done in the field of Pure Chemistry. Date of birth March 28th, 1916. (*Signed by*) S. H. Harper, R. P. Linstead, H. J. T. Ellingham.

SMITH, FREDERICK RANDALL, c/o Mrs. Phillips, 53, Cavendish Drive, Rock Ferry, Cheshire. British. Trainee, Unilever Limited. B.Sc. (1st Class Hons. Chemistry), Ph.D., Edinburgh. Carnegie Research Scholar, 1933-35; Thesis, "Effects of Substitution on Formation and Cyclisation of 11-Carboxy-benzanthrones." Date of birth April 4th, 1911. (*Signed by*) H. Gordon Rule, Neil Campbell, James Kendall.

STEPHENS, BRUCE ASHLEY, Wentworth, Beech Hill, Hadley Wood, Herts. British. Student. Date of birth March 3rd, 1915. (*Signed by*) Henry Terry, Alan D. Scott, J. B. Haley.

THOMPSON, HERBERT GEORGE GORDON, 22, Elmhurst Avenue, Mitcham, S.W. British. Technical Adviser on Fuel to the Gas Light and Coke Co. 1st Class Hons., Part I, Natural Science Tripos, Cambridge University. Three years' work of advanced manufacturing and analytical Chemistry, both practical and theoretical, including fairly extensive training in organic and to some extent in biochemistry in connection with Zoology and Botany. Date of birth June 19th, 1911. (*Signed by*) H. Hollings, Fred C. Smith, G. Vivian Davies.

TWIGG, GEORGE HILTON, St. John's College, Cambridge. British. Research Student. B.Sc., St. Andrews. I wish to join the Society in order to keep in touch with developments in Physical Chemistry. Date of birth April 3rd, 1913. (*Signed by*) Harry W. Melville, Adalbert Farkas, Eric K. Rideal, R. G. W. Norrish.

WARE, LANCELOT LIONEL, "Astolat," 65, The Chase, Wallington, Surrey. British. Student. B.Sc., Royal College of Science. To receive the J.C.S. and keep in touch with all branches of chemistry. Date of birth June 5th, 1915. (*Signed by*) G. A. R. Kon, R. P. Linstead, James C. Philip.

WEBBER, HAROLD, Clyde House, Cambridge Street, Loughborough, Leicestershire. British. Works Chemist. B.Sc., London. Past Student at Loughborough College and University College, Nottingham, and at present with a firm of Manufacturing Chemists. (*Signed by*) F. S. Kipping, J. B. Firth, H. H. Barber, G. M. Dyson, F. C. Laxton, B. D. Shaw, Herbert Marsden.

WILLIAMS, JAMES HOWARTH, Imperial College Hostel, Prince Consort Road, S. Kensington, S.W. 7. British. Research Student, Royal College of Science. Date of birth May 4th, 1913. (*Signed by*) R. P. Linstead, James C. Philip, G. A. R. Kon.

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

ALLEN, RUSSELL JAMES LAURENCE, "Glebe House," Reid, Canberra, F.C.T., Australia. British. Biochemist. B.Sc. (Western Australia), with Chemistry as major subject. M.Sc. (Melbourne) in Biochemistry. Biochemist at Australian Institute of Anatomy, Canberra. (*Signed by*) N. T. M. Wilmshire, G. A. Elliott.

ALLEN, WILLIAM, 2, Bridge Street, Lithgow, N.S.W. British. Teacher of Chemistry. M.Sc. (Sheffield). For past seven years have been teaching Chemistry at the High School and Technical College at Lithgow, N.S.W. (*Signed by*) W. P. Wynne.

BAKUNIN, MARIA, Laboratorio di Chimica Organica del R. Istituto Superiore d' Ingegneria, Napoli. Italiana. Professore ordinario di chimica Organica, Dottore in Chimica della R. Università di Napoli. Professore Universitare. (*Signed by*) N. V. Sidgwick.

FOLLETT-SMITH, ROBERT REDVERS, Department of Agriculture, Georgetown, British Guiana. British. Chemist Ecologist, Dept. Agric., British Guiana. B.Sc., Hons., London. Papers on biochemistry of sugar cane, Proc. Froghopper Investigation Comm., II, Trinidad. "Studies in Tropical Soils" (Joint Paper), *J. Agric. Sci.*, XXI, 739. Research Assistant to Professor of Chemistry, Imperial Coll. Trop. Agric., 1927-1928. Chemist Ecologist, Department of Agriculture, British Guiana, 1929 to date. (*Signed by*) F. Hardy.

FRENCH, MARCUS HARRY, c/o Veterinary Dept., Mpwapwa, Tanganyika Territory. British. Biochemist. M.A., and Dip. Agric. (Cantab.). Nutritional investigations, *J. Agric. Sci.*, 1929, **19**, 656; *ibid.*, 1929, **19**, 669 (with Woodman and Duckham); *ibid.*, 1931, **21**, 267 (with Woodman and Norman); *Annual Report Div. of Veterinary Science, Tanganyika Territory*, 1931, 1932, 1933, 1934. (*Signed by*) W. D. Raymond.

KERR, WILLIAM ROBERT, 86, Fitzroy Street, Burwood, Sydney, N.S.W. Australian. Laboratory Superintendent. Pharmaceutical Chemist (Sydney University, Pharmacy Board, N.S.W.). Formerly Manufacturing Superintendent and Chief Chemist, now Laboratory Superintendent, Frederick Stearns & Co., Australia. (*Signed by*) Horace Finnemore, Richard W. Challinor.

LAKHANI, JAMIAT VISHINDAS, Karachi (India), Professor of Chemistry, D.J., Sind College. Indian. Professor of Chemistry and Head of Chemistry Department. M.Sc. (Distinction), Bombay (India). A.I.I.Sc., Bangalore (India); Ph.D., Edinburgh. Investigator and Teacher in pure chemistry. 1932, "A Study of Liquid-Liquid Junctions with a View to Eliminate the Potential Difference thereat." (*Signed by*) R. C. Shah, T. S. Wheeler.

MAYBEE, GORDON R., 3727 de L'Oratoire Ave., Montreal, Que. (Business address: 2025, Masson Street, c/o J. S. Fry & Sons (Canada), Ltd., now Fry-Cadbury, Ltd.). English. Chief Chemist. B.A. (Queen's); B.Sc. (Queen's); A.C.I.C. 6 months' Chemist, Deloro Smelting & Refining Co., Deloro, Ont. 4 months' Chemist, Dominion Oilcloth & Linoleum Co., Montreal. 8 years' Chief Chemist, J. S. Fry & Sons (Canada), Ltd., Manufacturers of Cocoa, Chocolate, and Confectionery to His Majesty the King. (*Signed by*) Harold J. Roast.

NIEDERL, JOSEPH BERTHOLD, 32, Waverly Place, New York City, U.S.A. U.S.A. Associate Professor of Chemistry, New York University. Ph.D., University of Graz (Austria), 1925. 1921-1925, Research Chemist; 1925-1928, Instructor in Organic Chemistry at New York University; 1928-1933, Assistant Professor of Chemistry at New York University; 1933 to date, Associate Professor of Chemistry at New York University. (*Signed by*) W. C. MacTavish, John J. Ritter.

ROBERTSON, WALTER THOMAS, jun., "Highlands," Swann Road, Taringa, Brisbane, Queensland. British. Assistant Analyst and Bacteriologist, Water Supply Dept., Brisbane City Council. A short paper entitled "The Significance of a p_H Putrefactive Grade Test in Bacteriological Water Analysis," read before Queensland Royal Society and to be published as written. A comprehensive paper just completed, entitled: "Some Practical Methods in the Bacteriological Control of Water Supplies." (*Signed by*) E. J. Whitelock.

THOMAS, CHARLES ALLEN, Box 318, R.R. 2, Dayton, Ohio, U.S.A., Thomas & Hochwalt Laboratories, Inc. (Mailing address: Box 5, Station B, Dayton, Ohio.) American. Research Chemist. B.A., 1920; M.S., 1924; D.Sc., 1934 (Transylvania College; Massachusetts Institute of Technology; Transylvania College). President, Thomas & Hochwalt Laboratories, Inc.; Vice-President and General Manager, Monsanto Petroleum Chemicals, Inc. Papers: "Effect of Alkali-Metal Compounds on Combustion"; "Moisture-proof Determination of Waxed Papers"; "Polymerisation of Diolefins with Olefins. I. Isoprene and Pentene-2"; "Polymerisation of Diolefins with Olefins. II. Function of Pentene-2 in the Polymerisation of Isoprene"; "Drying Rates of Synthetic Resins with Drying Oils"; "Synthetic Resins from Petroleum Hydrocarbons." (*Signed by*) Austin M. Patterson.

VIGNEAUD, VINCENT DU, 4000, Cathedral Ave., Washington, D.C., U.S.A. United States of America. Professor of Biochemistry, School of Medicine, George Washington University, Washington. B.S., M.S., University of Illinois; Ph.D., University of Rochester Medical School. The candidate has contributed to the chemistry and intermediary metabolism of cystine, methionine, and homocystine and certain amino acids, and to the chemistry of insulin and the hormones of the posterior pituitary. (*Signed by*) H. T. Clarke.

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TRAITÉ DE CHIMIE ORGANIQUE. Publié sous la direction de V. GRIGNARD. Vol. I. Paris 1935. pp. xx + 1149. ill. (*Reference.*) 220 fr.

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BERGE, JACOB VAN DEN. Beoordeeling van de waarde van fungicide stoffen voor houtconserveering. Delft 1934. pp. 185.

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— *Fuel Research*. Technical Paper No. 43. Further experiments upon the water-gas process. By J. G. KING, B. H. WILLIAMS, and R. V. THOMAS. London 1935. pp. 58. ill.

DULFER, GERRITJE. Onderzoekingen over kwalitatieve analyse. Delft 1935. pp. 183.

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HENRIQUEZ, PERCY COHEN. Eenige toepassingen van de diëlectrische constante in de chemie. Delft 1935. pp. 170. ill.

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FORTHCOMING MEETINGS OUTSIDE LONDON.

BIRMINGHAM.

Monday, December 2nd, 1935, at 5 p.m. Lecture on "Alkaloids—General Ideas and Methods," by Professor G. Barger, D.Sc., F.R.S.

Monday, December 9th, 1935, at 5 p.m. Lecture on "The Decomposition of Molecules by Light," by Dr. R. G. W. Norrish, B.A.

These lectures are held in conjunction with the University of Birmingham Chemical Society in the Chemistry Lecture Theatre of the University at Edgbaston.

EDINBURGH.

Thursday, January 23rd, 1936, at 8 p.m. Lecture on "Some Recent Developments in Surface Chemistry," by Professor E. K. Rideal, M.B.E., D.Sc., F.R.S., at the North British Station Hotel.

GLASGOW.

Friday, December 6th, 1935. Ramsay Chemical Dinner at the Central Hotel at 7 p.m. The Chairman, Sir Thomas Holland, K.C.S.I., K.C.I.E., F.R.S., Principal and Vice-Chancellor of the University of Edinburgh, will propose "The Profession," to which Dr. J. F. Tocher will reply. Professor F. A. Paneth will reply to the toast of "Our Guests." Tickets price 14s. 6d. each can be obtained from Mr. Hugh C. Moir, 116, Paton Street, or from Dr. A. B. Crawford, Royal Technical College, 204, George Street.

LEEDS

Friday, January 31st, 1936, at 7 p.m. Lecture on "The Formation of Nuclei in Solids and their Rate of Growth," by Professor W. E. Garner, D.Sc., in the Lecture Theatre, New Chemistry Building, The University.

LIVERPOOL.

Tuesday, December 10th, 1935, at 6 p.m. in the Chemistry Lecture Theatre of the University. Lecture on "Formation of Anthocyanins in Plants," by Professor R. Robinson, D.Sc., F.R.S.

MANCHESTER.

Friday, December 6th, 1935, at 2.30 p.m. in the College of Technology and at 7 p.m. in the Engineers' Club, Albert Square. Joint meeting with the Food Group of the Society of Chemical Industry and the Manchester Section of the Society of Chemical Industry. A symposium on "Micro-Organisms and Foodstuffs."

Friday, January 10th, 1936, at 7 p.m. Joint meeting with the Manchester Sections of the Institute of Chemistry and the Society of Chemical Industry. Lecture on "A Chemical Contribution to the Cancer Enigma," by Professor J. W. Cook, D.Sc., Ph.D., in the Engineers' Club, Albert Square.

NEWCASTLE AND DURHAM

Fellows are invited to attend the Thirty-Second Bedson Lecture to be held in the Chemistry Lecture Theatre, Armstrong College.

Friday, December 6th, 1935, at 6.30 p.m. Lecture by Professor J. E. Lennard-Jones, D.Sc., F.R.S., on "Modern Theories of Valency."

FORTHCOMING MEETINGS IN LONDON.

Thursday, December 5th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

The following papers will be read :

- “ The free energy of hydration of some aliphatic compounds.” By J. A. V. BUTLER and C. N. RAMCHANDANI.
- “ The polar effects of the halogens in aromatic combination.” By G. BADDELEY, G. M. BENNETT, S. GLASSTONE, and B. JONES.
- “ Aliphatic substitution and the Walden inversion. Part I.” By E. D. HUGHES, F. JULIUSBURGER, S. MASTERMAN, B. TOPLEY, and J. WEISS.

Thursday, December 19th, 1935, at 8 p.m.

Ordinary Scientific Meeting.

Thursday, January 16th, 1936, at 8 p.m.

Discussion on “ Stereochemistry,” to be opened by Dr. W. H. Mills, M.A., F.R.S.

ANNUAL CHEMICAL DINNER.

The next Annual Chemical Dinner will be held at the Wharnccliffe Rooms, Great Central Hotel, Marylebone, N.W.1, on Tuesday, December 17th, 1935, at 7 for 7.30 p.m.

Application for tickets, price 12s. 6d. each for lady or gentleman, should reach Mr. F. A. Greene, The Chemical Club, 2, Whitehall Court, London, S.W.1, by Tuesday, 10th December, 1935.

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 .

A joint meeting with the University College of Swansea Chemical Society was held in the Department of Chemistry, University College of Swansea, on Friday, November 8th, 1935, at 6 p.m., Mr. G. O. RICHARDS, President of the University College of Swansea Chemical Society, being in the Chair. A lecture, entitled "Recent Investigations in the Chemistry of Gold," was given by Professor C. S. Gibson, O.B.E., M.A., Sc.D., F.R.S., and at the conclusion of the lecture a vote of thanks to the Lecturer, proposed by Mr. C. M. W. Grieb and seconded by Mr. E. Evans, was carried with acclamation.

A Discussion, under the auspices of the Society, on "Some Problems of Sugar Chemistry in Relation to Biology," was held in the Chemistry Lecture Theatre of the University College of South Wales, Cardiff, on Friday, November 22nd, 1935, at 5 p.m. with Dr. J. PRYDE in the Chair. The meeting was opened by Dr. E. L. Hirst, who read two papers on "Starch and Glycogen" (on behalf of Professor W. N. Haworth, who was unavoidably absent) and "Ascorbic Acid and its Analogues," respectively. After these, the following papers were read: "Polysaccharides in Immunological Reactions," by Dr. W. T. J. Morgan; "Carbohydrates in Fermentation and Cellular Processes," by Dr. J. H. Quastel; "Uronic Acids with special reference to Detoxication Problems," by Dr. J. Pryde. Each paper was followed by a discussion. The meeting adjourned for dinner from 7.15 to 8.45 p.m. A telegram expressing regret for absence through illness was received from Professor J. E. Coates, the local representative.

A meeting under the auspices of the Society and in conjunction with the University of Manchester Chemical Society was held in the Chemistry Lecture Theatre of the University of Manchester on Tuesday, November 26th, 1935, when Professor R. Robison, Ph.D., D.Sc., F.R.S., gave a lecture on "The Calcification of Animal Tissues," Professor I. M. Heilbron being in the Chair. There were about 150 present at the lecture, which was followed by a discussion.

A Joint Meeting with the University of Sheffield Chemical Society was held in the Chemistry Lecture Theatre of the University, Sheffield, on Friday, November 29th, 1935, at 5.30 p.m., when Professor M. Polanyi, M.D., Ph.D., delivered a Lecture on "Some Modern Views on Chemical Reaction Velocity." At the conclusion, a vote of thanks to the lecturer was moved from the Chair by Professor G. M. Bennett, supported by Dr. S. Glasstone, and carried with acclamation.

Ordinary Scientific Meeting, Thursday, December 5th, 1935, 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 November 17th, 1935, of Mr. Harry Baker, who was elected a Fellow in 1881.

Mr. S. Masterman was formally admitted a Fellow of the Society.

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

Edward Noah Abraham, B.Sc., 13, Silver Hill Road, Derby.
 John Newton Agar, B.A., 24, Parsonage Street, Cambridge.
 Leslie Clifford Bateman, 16, St. Stephens Road, Yiewsley.
 Ernest Francis Brookman, B.Sc., 30, Hobart Road, Cambridge.
 William Arthur Cowdrey, B.Sc., 86A, Ingelow Road, S.W. 8.
 Neil Reginald Fisk, 18, Bowood Road, S.W. 11.
 Alexander Henry Hayes, Helan Brae, Winifred Road, Coulsdon.
 Kenneth Edwin Holmes, B.Sc., 21, Fawcett Street, W. Brompton, S.W. 10.
 Thomas Picton Hughes, B.A., Bradford House, Llandovery, S. Wales.
 Stanley Graham Jarrett, B.Sc., 87, Stanmer Villas, Brighton.
 Griffith Glyn Jones, M.Sc., 7, Arran Place, Ardrossan.
 Gilbert Owen Morse, B.Sc., A.R.C.S., 22, Chester Road, Tottenham, N. 17.
 Vladimir A. Petrow, B.Sc., A.I.C., 106, Edith Road, W. Kensington, W. 14.
 Robert Chalmers Pitkethly, B.Sc., A.R.C.S., 163, Tudor Avenue, Hampton-on-Thames.
 Ernest Tidd, B.Sc., 12, Raeburn Road, Clarendon Park, Leicester.
 Beryl Westmoreland-White, B.Sc., A.R.C.S., 99, Norfolk Avenue, Sanderstead, Surrey.
 Frederick Charles Wood, B.A., 20, South Farm Road, Worthing.

for the second time in favour of 16 candidates, and for the third time in favour of 85 candidates.

Dr. Jessie Stewart and Mr. W. F. K. Wynne-Jones were elected Scrutators, and a ballot for the election of Honorary Fellows and of Fellows was held. The following were subsequently declared elected as Honorary Fellows :

Professor Johannes Nicolaus Brønsted (Copenhagen).
 President James Bryant Conant (Harvard, U.S.A.).
 Professor Dr. Georg von Hevesy (Copenhagen).
 Professor Dr. Leopold Ruzicka (Zürich).
 Professor Dr. Gustav Tammann (Göttingen).

and the following as Fellows :

Arthur James Colville Aikman, B.Sc.	Leon Haskelberg, D.-ès-Sc.
Russell James Laurence Allen, M.Sc.	Rowland Hebden, M.Sc.
William Allen, M.Sc.	William Edward van Heyningen, M.Sc.
Walter John Allum, B.Sc., A.R.C.S.	William Frederick Higgins, M.Sc., Ph.D.
Ronald Cedric Amsden.	Fritz Hiller, Dr.-Ing.
Frederick John Averill, B.Sc.	Maurice Leonard Hobday.
Russell Dudley Axam.	Walter John Hurran, B.Sc.
Maria Bakunin, Prof.	Charles George Jones, B.A.
Leslie Arthur Bashford, B.Sc., A.R.C.S.	John Kenyon Netherton Jones, M.Sc., A.I.C.
Ottlie Bergmann, Ph.D.	William Robert Kerr.
James Bhattacharjee, B.Sc., M.R.C.V.S.	Harold Kitchen, B.Sc.
Benjamin Markus Bloch, R.Nat.Dr.	Joseph Alfred Kitchener.
Victor Laurence Breeze.	Jamiat Vishindas Lakhani, Prof., M.Sc., Ph.D.
Francis Stephen Bridson-Jones, B.A.	Harold John Rowland Letts, B.A.
William Raymond Bulcraig, B.Sc.	Ralph Robert Lyne, B.Sc.
George Edward Charlish, B.Sc.	Juan Madinaveitia.
Ernest Edward Connolly.	Andrew Moir Malcolm.
Noel William Cusa, Ph.D.	Sydney Herbert Marshall, B.Sc.
Alan Henry Daniels, B.A.	George Thomas Oswald Martin, B.Sc.
Richard Robertson Davidson.	Laurence Seymour May.
James Gordon Napier Drewitt, B.A.	Gordon R. Maybee, B.A., B.Sc.
Denis Ian Duveen.	Reginald Robert Melhuish, Ph.D.
Edward Pierce Eastland, Ph.D., A.R.C.S., D.I.C.	Samuel Aaron Miller, B.A., B.Sc.
John Vernon Edmonds, B.Sc.	Reginald Conrad Milner.
John Clifford Holgate Ellis, B.A.	Samuel Derek Drake Morris, B.A.
Kenneth Davis Errington, A.R.C.S.	Colin Richard Morrison-Jones, B.Sc., A.R.C.S.
Raymond Ernest Fairbairn, B.Sc.	Joseph Berthold Niederl, Prof., Ph.D.
Philip Farrugia, B.Sc., M.D.	David John Norman, A.I.C.
Robert Redvers Follett-Smith, B.Sc.	Kenneth George Alfred Pankhurst.
Marcus Harry French, M.A., Dip. Agric.	William Hopper Pedelty, B.Sc.
John Albert Gardner, B.Sc., A.R.C.S.	Ervin Péteri, Dip. Ing. Chem.
Eric Paul Goodings.	Arthur George Pollard.
Arthur Greenwood.	Frederick Potts, B.Sc., B.Sc.Tech.
	Mowbray Ritchie, Ph.D., D.Sc.

John Cyril Roberts, B.Sc., B.Pharm., Ph.C., A.I.C.	Frederick Randall Smith, Ph.D.
Donald Robertson, B.A.	Bruce Ashley Stephens.
Walter Thomas Robertson, jun.	Charles Allen Thomas, B.A., M.S., D.Sc.
Edward Arthur Rogerson.	Herbert George Gordon Thompson.
Bernard Arthur Rose, B.Sc., A.R.C.S.	George Hilton Twigg, B.Sc.
George Henry Rowland.	Vincent du Vigneaud, Prof., M.S., Ph.D.
Erwin Schwenk.	Lancelot Lionel Ware, B.Sc.
Barry Alderson Scott, B.Sc., A.R.C.S.	Harold Webber, B.Sc.
Charles Simons.	James Howarth Williams.

The following papers were read :

- “ The free energy of hydration of some aliphatic compounds.” By J. A. V. BUTLER and C. N. RAMCHANDANI.
- “ The polar effects of the halogens in aromatic combination.” By G. BADDELEY, G. M. BENNETT, S. GLASSTONE, and B. JONES.
- “ Aliphatic substitution and the Walden inversion. Part I.” By E. D. HUGHES, F. JULIUSBURGER, S. MASTERMAN, B. TOPLEY, and J. WEISS.

A meeting under the auspices of the Chemical Society, the Food Group of the Society of Chemical Industry, and the Manchester Section of the Society of Chemical Industry, was held in Manchester on December 6th, 1935, under the general title “ A Symposium on Micro-organisms and Foodstuffs.” At the first session, held at the College of Technology, with Dr. L. H. LAMPITT in the Chair, the following papers were read and discussed :—

- “ Recent Developments in the Biochemistry of Moulds.” By P. W. CLUTTERBUCK.
- “ Recent Developments in the Biochemistry of Bacteria.” By T. K. WALKER.

At the second session, held at the Engineers' Club, with Mr. A. MCCULLOCH in the Chair, the following papers were read and discussed :—

- “ Microbiology of Fruit.” By R. G. TOMKINS.
- “ The Bacteriology of Canned Milk Products.” By Miss A. A. NICHOLS.
- “ Micro-organisms in the Baking Industry.” By C. H. F. FULLER.

At the conclusion of the papers, a vote of thanks to the authors was proposed by Mr. B. G. McLellan and seconded by Dr. T. Callan, and carried with acclamation.

A meeting of the Society was held at the University of Liverpool on Tuesday, December 10th, 1935, at 6 p.m., when Professor Robert Robinson, D.Sc., F.R.S., delivered a lecture entitled “ Formation of Anthocyanins in Plants.” Professors Baly, Hilditch, and Channon expressed their high appreciation of the lecture and a vote of thanks was carried with acclamation. Professor A ROBERTSON presided over a large audience.

Ordinary Scientific Meeting, Thursday, December 19th, 1935, 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 December 13th, of Professor Victor Grignard, who was elected an Honorary Fellow of the Society on March 18th, 1920, and stated that the Council had passed the following resolution :

“ The President, Officers and Council of the Chemical Society have learnt with profound regret of the death of their distinguished colleague, Professor Victor Grignard, Honorary

Fellow of the Society, and desire to record their high appreciation of the eminent services rendered by Professor Grignard to the Science of Chemistry. They offer to the relatives of the late Professor Grignard their sincere sympathy in the irreparable loss they have sustained."

Those present stood while the resolution was read.

The PRESIDENT also referred to the loss sustained by the Society, through death on November 23rd, 1934, of Joseph Richard Denison, who was elected a Fellow of the Society in 1892.

It was announced that :—

1. The Council, at its meeting that afternoon, had awarded the Longstaff Medal for 1936 to Professor George Barger, F.R.S. The presentation will be made at the Annual General Meeting to be held at the University of Bristol on Thursday, 16th April, 1936.

2. At the meeting of the Harrison Memorial Prize Selection Committee, consisting of the Presidents of the Chemical Society, the Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, held on December 12th, 1935, it was unanimously decided that the Harrison Memorial Prize for 1935 should be awarded to Dr. Leslie Ernest Sutton. The Presentation of the Prize will be made at the Annual General Meeting of the Chemical Society to be held at the University of Bristol on Thursday, April 16th, 1936.

The following were formally admitted Fellows of the Chemical Society :—F. C. Frank, C. W. Gibby, E. P. Eastland, and J. A. Kitchener.

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

George Peter Baker, 41, Preston Park Avenue, Brighton.
 Frederick Robert Basford, B.Sc., 101, Huntingtower Road, Grantham.
 Leonard Albert Bush, 40, High Street, Kingswood, Bristol.
 Jack Ward Drake, Oakwell View, Oxford Road, Gomersal, Leeds.
 Lewis Goodin Spire Hebbs, A.I.C., Croy-Brae, Powys Lane, N. 13.
 Bua Kamthong, B.Sc., 6, Heathfield Road, Liverpool.
 Hazel Alden Reason, B.Sc., 3, Wilderness Road, Onslow Village, Guildford.
 William Charles Slater, 4, Carlisle Avenue, E.C. 3.
 Arthur Smith, B.Sc., 31, Lower Stanton Road, Ilkeston.
 Eric Thomas Stiller, B.Sc., Ph.D., 11 E, Fawley Road, N.W. 6.
 William Glyn Wainwright, B.Sc., 25, Astonmead, Aston, Hawarden.
 Leonard Harvey Pocock Weldon, B.Sc., 9, Belsize Square, N.W. 3.
 Thomas Spence Work, B.Sc., 13, Montpelier Park, Edinburgh.

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

Henry Wyatt Johnston, M.Sc., Ph.D., 4048, Gage Road, Montreal.

Forms of recommendation for Fellowship were read for the second time in favour of seventeen candidates.

The following papers were read :

- " Adsorption at the interfaces between two fluids. Part I. The adsorption of methylene blue, methyl orange, Congo red, and orange II at benzene-water and chloro-water interfaces." By C. W. GIBBY and C. C. ADDISON.
 " PicROTOXIN. Part II. Picrotone and picrotonol." By D. MERCER and A. ROBERTSON.
 " Influence of the medium in dipole moment measurements. A summary of present work." By (MRS.) C. G. LE FÈVRE, R. J. W. LE FÈVRE, and P. RUSSELL.

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

		£	s.	d.	£	s.	d.
ALIGARH, MUSLIM UNIVERSITY							
R. D. Desai.	" Studies in <i>cyclohexane</i> series. The synthesis of 4:4-dimethyl <i>cyclohexane</i> -1-carboxy-1-acetic acid."				10	0	0
AUCKLAND UNIVERSITY COLLEGE, AUCKLAND, NEW ZEALAND							
L. H. Briggs.	" Plant products of New Zealand "	15	0	0			
R. A. Robinson.	" The activity coefficients of rubidium and caesium salts in aqueous solutions from vapour-pressure measurements "... ..	12	0	0			
					27	0	0
BANGOR, UNIVERSITY COLLEGE OF NORTH WALES							
A. E. Bradfield.	" The alcohols from the oils of (1) <i>Santalum lanceolatum</i> , and (2) <i>Encarya spicata</i> "	10	0	0			
E. R. H. Jones.	" Synthesis of sesquiterpene ketones "	5	0	0			
G. R. Ramage.	" The caryophyllenes "	10	0	0			
F. G. Soper.	" The effect of the solvent on the entropy change on formation of quaternary ammonium salts from the tertiary amine and alkyl halide "	10	0	0			
					35	0	0
BLACKBURN, MUNICIPAL TECHNICAL COLLEGE							
J. E. W. Rhodes.	" The partial vapour pressure of acetone in its mixtures with alcohols and other compounds "				5	0	0
BOMBAY, ROYAL INSTITUTE OF SCIENCE							
T. S. Wheeler.	" A study of the benzoin reaction "				5	0	0
CAMBRIDGE UNIVERSITY							
J. N. Agar.	" The electrodeposition of hydrogen ions on platinum, palladium, and gold electrodes "	8	0	0			
A. E. Alexander.	" Hydrolytic reactions in mono-layers "	5	0	0			
W. C. G. Baldwin.	" Optical properties of <i>spiroheptane</i> derivatives "	15	0	0			
C. H. Bamford.	" Photochemical decomposition of organic compounds "	10	0	0			
F. P. Bowden.	" The electrodeposition of ions from fused salts "	12	0	0			
E. J. Buckler.	" The mechanism of antiknocks "	8	0	0			
M. M. Davies.	" The kinetics of polymerisation processes, and the dependence of the properties of solutions of polymer substances upon the degree of polymerisation "	5	0	0			
T. P. Hughes.	" An investigation of the nature of polishing and the formation of the Beilby layer "	5	0	0			
H. F. Kenyon.	" The overpotentials of the hydrogen isotopes "	8	0	0			
E. A. Moelwyn-Hughes.	" The kinetics of certain reactions in solution "	8	0	0			
D. Richter.	" The oxidation of adrenaline "	10	0	0			
B. C. Saunders.	" Studies in peroxidase action "	10	0	0			
D. M. Simpson.	" The optical properties of pulegone and related compounds "	5	0	0			
M. L. Tomlinson.	" The preparation of some quaternary salts related to vitamin-B ₁ "	10	0	0			
					119	0	0
DURHAM UNIVERSITY							
C. W. Gibby.	" Adsorption of dissolved substances at the boundary between two immiscible fluids "				8	0	0
EDINBURGH UNIVERSITY							
A. Schönberg.	" Reactions of free radicals with trivalent carbon atoms "				8	0	0
GLASGOW UNIVERSITY							
J. Bell.	" Properties of deuterium compounds "	10	0	0			
D. T. Gibson.	" Mobility of groups containing a sulphur atom "	5	0	0			
J. Robertson.	" Optical structures in the dibasic sugar acid group "	5	0	0			
S. H. Tucker and H. G. Dunlop.	" The stereochemistry of carbazole derivatives "	5	0	0			
S. H. Tucker and H. France.	" The condensation of fluorene with acetone "	5	0	0			
					30	0	0

LONDON

	£	s.	d.	£	s.	d.
CHELSEA POLYTECHNIC						
C. Dorée. "Studies in the cholane group"	10	0	0			
P. J. Hardwick. "Chemical dynamics of the reactions between sodium <i>pseudo-cumerolate</i> and alkyl iodides in ethyl alcohol"	5	0	0			
	<hr/>			15	0	0
IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY						
H. Brunner. "Polymerisation of olefines"	5	0	0			
K. D. Errington. "A synthesis of polycyclic substances containing a bridge methyl group"	8	0	0			
S. N. Farmer. "Investigation of <i>Sarsa sapogenin</i> "	5	0	0			
J. S. Fitzgerald. "An investigation of the structure of quillaic acid"	5	0	0			
J. A. Gardner. "The mechanism of abnormal Michael reactions"	5	0	0			
P. Gaubert. "Additive reactions of higher unsaturated acids"	5	0	0			
F. Hilton. "Study of the polymerisation of linolin and linolenic acids"	5	0	0			
K. E. Holmes. "The formation and additive behaviour of butadiene and certain of its derivatives"	4	0	0			
A. F. Millidge. "The synthesis of bridge-methylated bicyclic sub- stances and their degradation products"	5	0	0			
C. R. Morrison-Jones. "Reactivity and polymerisation of licanic acid"	4	0	0			
E. S. Narracott. "Synthesis of desoxyquilenin methyl ether"	5	0	0			
L. W. J. Newman. "The isomerisation of some aryl-substituted unsaturated alcohols"	5	0	0			
E. S. Paice. "Synthesis of diene and triene members of the fatty acid series"	5	0	0			
R. C. Pitkethly. "Polymerisation of conjugated diene hydrocarbons"	5	0	0			
N. F. Sarsfield. "Studies in the dehydration of unsaturated alcohols and in the dehydrohalogenation of unsaturated chlorides"	5	0	0			
B. Saunders. "Synthesis of polycyclic compounds and investigation of their dehydrogenation with selenium"	5	0	0			
C. Simons. "Constitution of the aglucone from mowrah meal"	5	0	0			
L. L. Ware. "Synthesis of homologues of picene"	5	0	0			
P. A. Winsor. "Synthesis of substituted <i>cyclopentane</i> 1:2-dicarb- oxylic acids"	8	0	0			
	<hr/>			99	0	0
NORTHERN POLYTECHNIC						
H. J. S. King. "Acido-ammines of bivalent platinum"				15	0	0
QUEEN MARY COLLEGE						
E. G. Cowley. "Dielectric polarisation"	10	0	0			
E. W. Claydon. "Studies in mutual liquid miscibility with special reference to the problem of chelation in benzene derivatives and the aliphatic glycols"	10	0	0			
C. L. Cutting. "The character of films adsorbed from the vapour phase at a water surface"	10	0	0			
R. E. Fairbairn. "Investigation of complex azo-dyes"	5	0	0			
W. J. Hurran. "The constitutions of some organo-magnesium com- pounds"	8	0	0			
G. T. O. Martin. "Dielectric polarisation"	8	0	0			
K. W. Pepper. "The determination of the molecular weights of certain possibly chelated ring compounds"	10	0	0			
J. W. Skeen. "Oxidation reduction potentials in non-aqueous solu- tion"	5	0	0			
	<hr/>			66	0	0
UNIVERSITY COLLEGE						
L. C. Bateman. "Kinetics of the halogen exchange reaction"	10	0	0			
W. A. Cowdrey. "The rôle of hydrolytic agents in relation to the Walden inversion"	10	0	0			
S. K. Hsü. "The mechanism of tautomerism"	10	0	0			
S. Masterman. "The stereo-orientation of substitutions, especially in halogen exchange"	10	0	0			
R. P. Patel. "Study in the synthesis of compounds likely to be of pharmacological interest from the natural alkaloid cytesin"	10	0	0			
L. H. P. Weldon. "Investigation of equilibria in deuterium exchange reactions"	8	0	0			
C. L. Wilson. "The structure of benzene"	10	0	0			
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W. L. German. "Studies of complex compounds in non-aqueous media"	20	0	0			
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A. Burawoy. "Relationship between light absorption and constitution of organic compounds"				10	0	0
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J. B. Firth. "Selective adsorption of gases and vapours." "Distillation of binary mixtures"	10	0	0			
E. B. R. Prideaux and K. R. Webb. "An examination of the acid fluorides of rubidium and caesium"	3	0	0			
B. D. Shaw. "Preparation of 1:5-dicarbonyl compounds from pyridine bases"	5	0	0			
B. D. Shaw and E. Tidd. "The reactivity of aldehydes"	5	0	0			
				23	0	0
OXFORD UNIVERSITY						
W. Baker. "The formation and properties of <i>o</i> -quinonoid compounds"	10	0	0			
B. K. Blount. "The constitution of certain alkaloids"	15	0	0			
F. E. King. " α - and β -Hydroxylaudanosines"	12	0	0			
J. K. Marsh. "Dimethylphosphates of the rare earths"	6	0	0			
E. A. H. Roberts. "The kinetics of lysozyme action"	10	0	0			
H. W. Thompson. "The photochemistry of some polyatomic molecules containing alkyl radicals"	15	0	0			
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READING UNIVERSITY						
A. K. Mills. "The mechanism of the deamination of amino-alcohols"				10	0	0
SHEFFIELD UNIVERSITY						
A. W. Chapman. "Isomeric change in aromatic compounds" (<i>continued</i>)	10	0	0			
B. Jones. "The chlorination of phenolic ethers"	10	0	0			
				20	0	0
SOUTHAMPTON, UNIVERSITY COLLEGE						
A. Lawson. "Investigations of the constitution of aconitine" ...				6	0	0
WOLVERHAMPTON, TECHNICAL COLLEGE AND PRIVATE LABORATORY						
K. G. Lewis. "The corrosion and protection of magnesium and some magnesium alloys"					5	0
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				£740	0	0

ANNUAL REPORTS FOR 1935, VOL. XXXII.

Applications for the Annual Reports for 1935, at the reduced price of 5s. 6d., should reach the Assistant Secretary by January 15th, 1936.

ACHEMA VIII 1937, FRANKFURT A. MAIN.

The "Achema VIII" exhibition of chemical plant, organised by the Dechema Deutsche Gesellschaft für chemisches Apparatewesen E.V. (German Chemical Plant Association), will be held in Frankfurt a. Main early in September, 1937, together with the 50th General Meeting of the Verein Deutscher Chemiker.

BRITISH STANDARDS INSTITUTION.

The following British draft Standard Specifications have been received from the British Standards Institution and may be seen in the Library:—

No. 642—1935 for Carbide of Calcium (Graded Sizes).

No. 647—1935 for Methods of Testing Glues (Bone, Skin, and Fish Glues).

EXEMPTIONS FROM KEY INDUSTRY DUTY.

The Society has received from the Board of Trade a list of chemicals exempted from the Key Industry Duty until the 19th August, 1936. This list has been placed in the Library.

List of Papers, or Abstracts thereof, received between November 21st and December 19th, 1935. (This list does not include the titles of papers which have appeared in the Journal, or which have been read at an Ordinary Scientific Meeting.)

- "The electrolytic preparation of deuterium and the separation coefficient α ." By M. P. APPLEBEY and G. OGDEN.
- "On the possibility of ring-chain mesomerism. Part II. Properties of Δ^{α} -hexadiene- $\alpha\alpha\gamma\delta\delta\zeta$ -hexacarboxylic esters." By C. K. INGOLD, M. M. PAREKH, and C. W. SHOPPEE.
- "The condensation of chloral with salicylic acid." By F. CALVET and M. N. MEJUTO.
- "The nitration of 1:8-dihydroxynaphthalene." By F. CALVET.
- "The resolution of phenyl-*n*-propylcarbinol." By J. KENYON and S. M. PARTRIDGE.
- "Chromic picrate." By H. J. S. KING.
- "Reactions of *o*-hydroxybenzylidenediacetophenones. Part VI. Diacetophenones derived from 3-methoxysalicylaldehyde." By G. H. BEAVEN and D. W. HILL.
- "A minimum estimate of the dipole moments of two oxonium salts. A note." (MRS.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.
- "Solvent effect in dipole moment measurements. The apparent dipole moments of *p*-dichlorobenzene in different solvents." By (MRS.) C. G. LE FÈVRE and R. J. W. LE FÈVRE.
- "Observations bearing upon the mechanism of permanganate reduction and the induced oxidation of chlorion." By H. BASSETT and (MISS) I. SANDERSON.
- "The simultaneous formation of two isomeric isopropylidene derivatives of 2-methyl γ -methylglucoside." By D. J. BELL.
- "Researches on residual affinity and co-ordination. Part XXXVI. The constitution of 'ruthenium red.'" By G. T. MORGAN and F. H. BURSTALL.
- "Optical activity dependent on co-ordinated bivalent ruthenium." By F. H. BURSTALL.
- "The synthesis of compounds related to the sterols, bile acids, and oestrus-producing hormones. Part IX." By A. COHEN, J. W. COOK, and C. L. HEWETT.

- “The synthesis of compounds related to the sterols, bile acids, and oestrus-producing hormones. Part X. Ruzicka's hydrocarbon 'C₂₁H₁₆' from cholic acid.” By W. E. BACHMANN, J. W. COOK, C. L. HEWETT, and J. IBALL.
- “The dehydration of benzylcyclohexanols.” By J. W. COOK and C. L. HEWETT.
- “A new synthetic route to hydroaromatic ketones related to anthracene and phenanthrene.” By J. W. COOK, C. L. HEWETT, and C. A. LAWRENCE.
- “The action of sulphinates on 2 : 4-dinitrodiphenylsulphones.” By J. D. LOUDON.
- “The phenazine series. Part III. The isomeric octahydrophenazines.” By G. R. CLEMO and H. MCILWAIN.
- “Experiments on the synthesis of rotenone and its derivatives. Part VIII. Netoric acid and toxicaric acid.” By A. ROBERTSON and G. L. RUSBY.
- “Hydroxy-carbonyl compounds. Part X. Coumarins and chromones from 1 : 3 : 4-*m*-xylenol.” By D. G. FLYNN and A. ROBERTSON.
- “The elimination of chlorine in the hydrolysis of aqueous solutions of chloroacetic acid and the chloroacetates.” By H. M. DAWSON and E. R. PYCOCK.
- “The photochemical de-amination of amino-acids in water solution.” By CH. WEIZMANN, E. BERGMANN, and Y. HIRSHBERG.
- “Methoxylated *o*-benzoylbenzoic acids.” By CH. WEIZMANN and E. BERGMANN.
- “*cyclo*Pentenotriphenylene.” By E. BERGMANN and (MRS.) O. BLUM-BERGMANN.
- “The thermolysis of cholesteryl chloride.” By E. BERGMANN and F. BERGMANN.
- “Reduction experiments with thionessal.” By E. BERGMANN.
- “Note on optically active (2-pentyl)-diethylcarbinol.” By E. BERGMANN and A. BONDI.
- “Grignard reactions with ethyl β-chloropropionate. Part I.” By CH. WEIZMANN and E. BERGMANN.
- “Synthetic experiments with diphenylmethyl sodium.” By E. BERGMANN.
- “Dipole moment and molecular structure. Part XVII. The dipole moments of substituted α-methylstyrenes.” By E. BERGMANN and (MISS) A. WEIZMANN.
- “Glucosides of the imidazole series.” By E. BERGMANN and H. HEIMHOLD.
- “Dipole moment and molecular structure. Part XVIII. The dipole moments of azo-dyes and some similar substances.” By E. BERGMANN and (MISS) A. WEIZMANN.
- “The mechanism of substitution reactions and the Walden inversion. Part III.” By E. BERGMANN.
- “The mechanism of the conversion of Δ^γ-butenol into Δ^β-butenol bromide.” By L. W. J. NEWMAN and H. N. RYDON.
- “A coloured modification of mercuric bromide.” By A. W. MIDDLETON.
- “The preparation of acenaphthylene glycol and some condensation reactions of 1 : 8-naphthalene dialdehyde.” By B. K. BLOUNT and A. WEISSBERGER.
- “Syntheses of polycyclic compounds related to the sterols. Part V. Some methoxy- and hydroxy-derivatives of phenanthrene.” By G. A. R. KON and F. C. J. RUZICKA.
- “Derivatives of *tert*-butylbenzene and transmitted polar effects.” By (the late) J. B. SHOESMITH and A. MACKIE.
- “Experiments on the synthesis of substances related to the sterols. Part VIII. A ketomethoxymethylhexahydrophenanthrene.” By R. ROBINSON and J. WALKER.
- “Studies in dielectric polarisation. Part XVI. The dipole moments of some acid halides and phosphorus oxychloride.” By G. T. O. MARTIN and J. R. PARTINGTON.
- “Walden inversion reactions of *d*-(+)-α-*p*-toluenesulphoxypropionic acid and amide and their derivatives.” By C. M. BEAN, J. KENYON, and H. PHILLIPS.
- “The preparation of tetrahydrofurfuryl bromide and its reaction with magnesium.” By R. ROBINSON and L. H. SMITH.
- “Some derivatives of quinazoline.” By (MISS) T. M. REYNOLDS and R. ROBINSON.
- “A synthesis of bicuculline. Part I.” By P. W. G. GROENEWOUD and R. ROBINSON.
- “Some points arising from the modern theories of corrosion. Part I. Waterline corrosion.” By J. E. O. MAYNE.
- “Strainless monocyclic rings. Part II. Synthesis and separation of 3-methylcyclohexane-1-carboxy-1-acetic acid.” By M. QUDRAT-I-KHUDA, A. MUKHERJI, and P. BANERJI.

- "Studies in keto-lactol tautomerism. Part V. The influence of methylcyclohexane rings on the tautomerism of some δ -ketonic acids." By M. QUDRAT-I-KHUDA and A. MUKHERJI.
- "The formation of organo-metalloidal compounds by micro-organisms. Part IV. Dimethyl-*n*-propylarsine and methylethyl-*n*-propylarsine." By F. CHALLENGER and A. A. RAWLINGS.
- "Electrolytic reduction of organic compounds. Part I. Analogies between cathodic reduction and the action of dissolving metals. Reduction of sorbic acid." By E. ISAACS and C. L. WILSON.
- "Isomeric forms of the optically active $\alpha\gamma$ -dimethylallyl alcohols." By H. W. J. HILLS, J. KENYON, and H. PHILLIPS.
- "1 : 2 : 3-Triketotetramethylcyclopentane : a blue triketone." By C. W. SHOPPEE.
- "Melting-point curves of optical isomerides of $\gamma\gamma\gamma$ -trichloro- β -hydroxy-butyric acid and its methyl ester." By J. D. M. ROSS.
- "Melting-point curves of optical isomerides of esters of mandelic acid." By J. D. M. ROSS.

ADDITIONS TO THE LIBRARY.

I. *Donations.*

CANADA. *Dominion Bureau of Statistics. Mining, Metallurgical and Chemical Branch. Chemicals and allied products in Canada 1933.* Ottawa 1935. pp. 141. (*Reference.*) From the Canadian Government Trade Commissioner.

FREUNDLICH, HERBERT. *The chemistry of rubber.* London 1935, pp. xii + 72. ill. 2s. 6d. net. (*Recd.* 21/11/35.) From the Publishers : Messrs. Methuen & Co.

FRIEND, G. E. *The schoolboy. A study of his nutrition, physical development and health.* Cambridge 1935. pp. xii + 128. ill. 7s. 6d. net. (*Recd.* 4/12/35.)

From Dr. J. Vargass Eyre.

GLASSTONE, S., and HICKLING, A. *Electrolytic oxidation and reduction : inorganic and organic.* (Monographs on Applied Chemistry.) London 1935. pp. x + 420. ill. 25s. net. (*Recd.* 11/12/35.) From the Authors.

INSTITUTION OF PETROLEUM TECHNOLOGISTS. *Standard methods for testing petroleum and its products.* 3rd edition. London 1935. pp. xii + 228. ill. 7s. 6d. net. (*Recd.* 22/10/35.) From the Institution.

PAULING, LINUS, and WILSON, E. BRIGHT. *Introduction to quantum mechanics with applications to chemistry.* New York 1935. pp. xiv + 468. ill. 30s. net. (*Recd.* 12/12/35.) From the London Publishers : McGraw-Hill Publishing Co.

PENNEY, W. G. *The quantum theory of valency.* London 1935, pp. viii + 95. ill. 2s. 6d. net. (*Recd.* 14/11/35.) From the Publishers : Messrs. Methuen & Co.

PRIDEAUX, E. B. R. and LAXTON, F. C. *A laboratory course in elementary chemistry.*

London 1935. pp. xiv + 258. ill. 3s. net. (*Recd.* 30/11/35.) From the Publishers : Messrs. William Heinemann.

II. *By purchase.*

FIERZ-DAVID, HANS EDUARD. *Künstliche organische Farbstoffe. Ergänzungsband.* Berlin 1935. pp. vi + 136. ill. M. 14.50. (*Recd.* 9/12/35.)

FINLEY, GEORGE H. [Editor.] *The handbook of butane-propane gases.* 2nd edition. Los Angeles 1935. pp. 321 + [v]. ill. \$5. (*Recd.* 28/11/35.)

WINKLER, L. W. *Ausgewählte Untersuchungsverfahren für das chemische Laboratorium.* Part II. (Die chemische Analyse, Vol. XXXV.) Stuttgart [1935]. pp. viii + 159. ill. (*Reference.*) M. 15.80.

III. *Pamphlets.*

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Water Pollution Research.* Technical Paper No. 5. *Survey of the River Tees. Part II. The estuary—chemical and biological.* By W. B. ALEXANDER, B. A. SOUTHGATE, and R. BASSINDALE. London 1935. pp. xiv + 171. ill.

INDIA. *Society of Biological Chemists.* Influence of light on some biochemical processes. By N. R. DHAR. Bangalore 1935. pp. iv + 73.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. *Miscellaneous Publications.* No. 4. *Tin and its uses.* By D. J. MACNAUGHTAN. (From *Modern Uses of Non-Ferrous Metals*, 1935.)

— — — No. 5. *Tin and civilisation.* By D. J. MACNAUGHTAN. London 1935. pp. 9.

FORTHCOMING MEETINGS OUTSIDE LONDON.*EDINBURGH.*

Thursday, January 23rd, 1936, at 8 p.m. Lecture on "Some Recent Developments in Surface Chemistry," by Professor E. K. Rideal, M.B.E., D.Sc., F.R.S., at the North British Station Hotel.

GLASGOW.

Friday, February 7th, 1936, at 7.30 p.m. Lecture on "Some Recent Developments in Surface Action," by Professor E. K. Rideal, M.B.E., D.Sc., F.R.S., at the Royal Technical College.

LEEDS.

Friday, January 31st, 1936, at 7 p.m. Lecture on "The Formation of Nuclei in Solids and their Rate of Growth," by Professor W. E. Garner, D.Sc., in the Lecture Theatre, New Chemistry Building, The University.

LIVERPOOL.

Friday, February 7th, 1936, at 6 p.m. Lecture on "The Play of the Molecules in a Simple Chemical Reaction," by Professor H. M. Dawson, D.Sc., F.R.S., in the Chemistry Lecture Theatre of the University.

MANCHESTER.

Friday, January 10th, 1936, at 7 p.m. Joint Meeting with the Manchester Sections of the Institute of Chemistry and the Society of Chemical Industry. Lecture on "A Chemical Contribution to the Cancer Enigma," by Professor J. W. Cook, D.Sc., Ph.D., in the Engineers' Club, Albert Square.

Tuesday, February 4th, 1936, at 4.30 p.m. Joint Meeting with the University of Manchester Chemical Society. Lecture on "The Structure of Benzene," by Professor C. K. Ingold, D.Sc., F.R.S., in the Chemistry Lecture Theatre of the University.

Thursday, February 20th, 1936, at 7 p.m. Joint Meeting with the Manchester Sections of the Institute of Chemistry and the Society of Chemical Industry. Lecture on "Chemistry and Medicine," by Dr. J. F. Wilkinson, M.Sc., Ph.D., M.D., F.I.C., in the Lecture Theatre of the Manchester Central Library, St. Peter's Square.

NORTH WALES.

Friday, February 7th, 1936, at 8 p.m. Lecture on "Ergot and Ergotism," by Professor G. Barger, M.A., D.Sc., F.R.S., in conjunction with the University College Chemical Society in the Chemistry Lecture Theatre, University College, Bangor.

ST. ANDREWS AND DUNDEE.

Friday, February 28th, 1936, at 5 p.m. Joint meeting with St. Andrews University Chemical Society. Lecture on "The Chemistry of the Sesquiterpenes," by Professor J. L. Simonsen, D.Sc., F.R.S.

SHEFFIELD.

Saturday, February 8th, 1936, at 2.30 p.m. Joint Meeting with the Yorkshire Branch of the Science Masters' Association in the Chemistry Lecture Theatre of the University.

FORTHCOMING MEETINGS IN LONDON.

Thursday, January 16th, 1936, at 8 p.m.

Discussion on "Stereochemistry," to be opened by Dr. W. H. Mills, M.A., F.R.S., and followed by Dr. P. Maitland on "Allene Dissymmetry," Professor S. Sugden on "Stereochemistry of 4-Co-ordinated Compounds of the Transitional Elements," Professor Alex. McKenzie on "Stereochemistry of Intramolecular Changes," and Dr. E. E. Turner on "Stereoisomerism dependent on Restricted Rotation about a Single Bond."

IMPORTANT NOTICE.

This meeting will be held in the Lecture Theatre of the Royal Institution, 21, Albemarle Street, London, W.1 (by the courtesy of the Managers), and not at Burlington House, as previously arranged.

Thursday, February 6th, 1936, at 8 p.m.

Ordinary Scientific Meeting.

Wednesday, February 12th, 1936, at 5.30 p.m.

Sixteenth Faraday Lecture entitled "Radioactivity and Atomic Theory," by the Rt. Hon. Lord Rutherford of Nelson, O.M., F.R.S., in the Lecture Theatre of the Royal Institution, Albemarle Street, London, W. 1.

Thursday, February 20th, 1936, at 8 p.m.

Joint Discussion with the Faraday Society on "The Kinetics of Gaseous Combustion," to be opened by Dr. R. G. W. Norrish, B.A.