

PAGES MISSING 1 TO 10

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETINGS IN LONDON.

Thursday, March 2nd, 1939, at 5.30 p.m.

A **Symposium** on "Microtechnique in Organic Chemistry" to be opened by Professor I. M. Heilbron, D.S.O., D.Sc., F.R.S., will be held in the Chemistry Lecture Theatre of the **Imperial College, S. Kensington (Imperial Institute Road)**, on March 2nd, 1939, at 5.30 p.m. and not at Burlington House at 8 p.m. The following have agreed to take part in the discussion: Miss D. M. Crowfoot, Dr. Einar Stenhagen, Dr. A. H. Cook, Dr. H. Jackson, and Mr. W. F. Boston. Tea will be provided by the Governing Body of the Imperial College at 5 p.m.

Thursday, March 16th, 1939, at 8 p.m.

Meeting for the reading of original papers.

ANNIVERSARY MEETINGS.

Programme.

Wednesday, March 29th, 1939.

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| 5 p.m. | RUTHERFORD MEMORIAL LECTURE , by Sir Henry Tizard, K.C.B., F.R.S. To be delivered in the Lecture Theatre of the Royal Institution , by the courtesy of the Managers. Admission will be by ticket only. |
| 8.45 p.m. till midnight ... | RECEPTION AND DANCE , given by Imperial Chemical Industries, Ltd., Imperial Chemical House , Millbank, S.W. 1. |

Thursday, March 30th, 1939.

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| 11.0 a.m.
(at Regent's Park) | VISITS. (a) To Bedford College for Women, Regent's Park, N.W. 1. |
| 11.0 a.m.
(at Euston Road) | (b) To Wellcome Chemical Research Laboratories, 183, Euston Road, N.W. 1. |
| 2.30 p.m. | THE NINETY-EIGHTH ANNUAL GENERAL MEETING at Burlington House. Business portion of the meeting (open to Fellows only). |
| 3.30 p.m. | TEA. |
| 4.0 p.m. | PRESENTATION OF LONGSTAFF MEDAL AND HARRISON MEMORIAL PRIZE. |
| | PRESIDENTIAL ADDRESS , by Professor F. G. Donnan, C.B.E., D.Sc., LL.D., F.R.S. |
| 7 for 7.30 p.m. | ANNIVERSARY DINNER , at Grosvenor House, Park Lane W. 1. |

(Continued on

Friday, March 31st, 1939.

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| 10.0 a.m. | ... | ... | VISITS. | (a) To British Drug Houses, Ltd., Graham Street, City Road, E.C. 1. |
| | (at Burlington House) | | | (b) To The Central Laboratories of the Shell Marketing Co., Ltd., at Fulham, S.W. 6. |
| 10.15 a.m. | ... | ... | | (a) To The Research Institute of the Distillers Company, Ltd., at Epsom. |
| | (at Burlington House) | | | (b) To The Laboratories of The Research Association of the British Paint, Colour, and Varnish Manufacturers, at Teddington. |
| 2.20 p.m. | ... | ... | | |
| | (at Burlington House) | | | |
| | Ditto. | | | |

Further particulars will be announced.

Thursday, April 20th, 1939.

Meeting for the reading of original papers.

MEETINGS OUTSIDE LONDON.

MANCHESTER.

Thursday, March 2nd, 1939, at 7 p.m. **Meeting for the reading of original papers,** to be held in the College of Technology.

Monday, March 20th, 1939, at 7.30 p.m. **Lecture** on "The Mechanism of Polymerisation Reactions" by H. W. Melville, D.Sc., Ph.D., A.I.C. **Joint meeting of the Chemical Society, the Institution of the Rubber Industry, and the Society of Chemical Industry,** to be held in the Engineers' Club, Albert Square, Manchester.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

Minutes of a
SCIENTIFIC MEETING

held at Burlington House, London, W. 1, on Thursday, February 2nd, 1939, at 8 p.m.

The PRESIDENT, Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the visitors who were present.

The minutes of the Scientific Meeting of January 19th, 1939, appearing in the Proceedings for January, were taken as read and were confirmed and signed.

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

	Elected.	Died.
Charles Holmes Herty	1906	July 27th, 1938.
Charles William Priestley	1889	1932.
Frank Moreton Thomas	1908	Jan. 21st, 1939.

FORMAL ADMISSION OF FELLOWS.

The following were formally admitted Fellows of the Chemical Society : D. P. Young, D. A. Sutton, G. H. Dazeley, B. J. Heywood, P. P. Hopf, J. J. Wilson, L. C. Cross, G. A. P. Tuey, and C. Werner.

The following papers were read :

- “Restricted rotation in the benzene series. An optically active ethylenic derivative.”
By W. H. MILLS and G. H. DAZELEY.
- “Reactions of aliphatic diazo-compounds with carbonyl derivatives.” By D. W. ADAMSON and J. KENNER.
- “Structural problems in the indole group. Part III. Halogen compounds.” By S. G. P. PLANT and (MISS) A. E. J. WILSON.

Minutes of a
JOINT MEETING

**of the Physiological Society and the Chemical Society held at Burlington House,
London, W. 1, on Thursday, February 9th, 1939, at 5.30 p.m.**

The President, Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the Members of the Physiological Society, and other visitors who were present.

Professor Dr. G. von Hevesy was formally admitted an Honorary Fellow of the Chemical Society.

The Chair was then occupied by SIR HENRY DALE, C.B.E., F.R.S.

The Discussion on “The Use of Isotopes in Biology” was opened by Professor VON HEVESY, and the following took part : Professor H. S. Raper, Dr. W. E. van Heyningen,

Dr. J. N. E. Day, Dr. B. G. Maegraith, Dr. W. D. Armstrong, Mr. C. H. Collie, Dr. S. K. Kon, Dr. D. Roaf, Professor J. B. S. Haldane, Mr. G. W. Cooke, Dr. S. Anwar Ullah, Mr. A. L. Bacharach, Dr. H. T. Calvert, Dr. E. Boyland, Dr. H. A. Krebs, Mr. A. R. J. P. Ubbelohde.

At the conclusion of the Discussion, a vote of thanks to Professor G. von Hevesy, proposed by Professor A. V. Hill, and seconded by Professor S. Sugden, was carried with acclamation, Professor von Hevesy making acknowledgement.

Minutes of a SCIENTIFIC MEETING

held at Burlington House, London, W. 1, on Thursday, February 16th, 1939, at 8 p.m.

In the absence of the PRESIDENT, the Chair was occupied by Sir Robert Pickard, D.Sc., Ph.D., F.R.S., Vice-President.

The visitors present were welcomed by the Chairman.

The minutes of the Scientific Meeting of February 2nd, 1939, and of the Joint Discussion with the Physiological Society of February 9th, 1939, were read, and were confirmed and signed.

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

	Elected.	Died.
Edward R. Bolton	1901	Feb. 10th, 1939.
Arthur Smithells	1883	Feb. 8th, 1939.

The CHAIRMAN also referred to the loss sustained by the Society, through death, of Professor Joji Sakurai, on January 28th, 1939, and of Professor Sören P. L. Sörensen, on February 12th, 1939, and stated that the Council had passed the following resolutions :

“ The President, Officers, and Council of the Chemical Society learn with profound sorrow of the death on January 28th of Professor Joji Sakurai, who was elected an Honorary Fellow of the Chemical Society on May 7th, 1931, and express their deep regret at the loss of their distinguished colleague. They record their high appreciation of the great services he has rendered to the development of science in Japan and to its application to the needs of mankind, and desire to express their deep sympathy to his relatives in the irreparable loss they have sustained.”

“ The President, Officers, and Council of the Chemical Society learn with profound sorrow of the death on February 12th of Professor Sören Peter Lauritz Sörensen, who was elected an Honorary Fellow of the Chemical Society on March 18th, 1920, and express their deep regret at the loss of their distinguished colleague. They record their high appreciation of the great services he has rendered to the science of Chemistry, particularly in the physico-chemical study of proteins, and desire to express their deep sympathy to his relatives in the irreparable loss they have sustained.”

The following announcements were made :

1. CONGRATULATIONS.

The congratulations of the Society have been conveyed to Professor P. P. Bedson, who completed 60 years of Fellowship on February 6th, 1939, and to Professor G. Ingle Finch on his receiving the honour of Commander of the Order of King Leopold II conferred on him by King Leopold III.

2. ACKNOWLEDGEMENTS.

The Council has conveyed the thanks of the Society to the following :

(a) The Chemical Council for a grant of £1000 towards the cost of the Society's publications for 1938.

(b) Dr. E. F. Armstrong for fifteen medals and plaques from those belonging to the late Professor Henry E. Armstrong which were not already in the possession of the Society :

Bernthsen.
 Collège de France, 1530–1930.
 Conti.
 Davy Medal, Royal Society.
 International Health Exhibition, London, 1884.
 Le Bel, 15–17 Juin, 1933.
 Pasteur, 1822–1922.
 Royal International Horticultural Exhibition, London, 1912.
 Royal Society of Arts, 1921–1922.
 Schützenberger, 1829–1929.
 University of Oslo, 1811–1911.
 Van 't Hoff, 1852–1911.
 Berthelot.
 Dewar, 1908.
 Messel, 1920.

3. ELECTION OF FELLOWS.

The following candidates have been elected Fellows of the Chemical Society by the Council on February 16th, 1939 :

Fawzy Ghali Baddar.	Harry Edward Jackson.
Angus Ross Chambers.	Harold Jaspersen.
Frank Caldwell Collins.	Sydney Leadley.
Harold James Dothie.	Harry Frank Victor Little.
Edward George Edwards.	John Carswell McGowan.
Stanley Russell Finn.	Hara Nath Mitra.
Albert Edward Footitt.	Francis Owen Rice.
Francis Samuel Fowkes.	Dennis Parker Riley.
William Freeman-Horn.	Robert Owen Roberts.
John Henry Gorvin.	Edwin John Schorn.
Herbert Gudgeon.	Eric Tittensor.
Mostafa Mahmoud Hafez.	Ramsay Middleton Winter.

FORMAL ADMISSION OF FELLOWS.

The following were formally admitted Fellows of the Chemical Society : J. K. N. Jones, C. Kemplay, E. M. Gibbs, and F. Smith.

The following papers were read :

- “ Mesomorphism and polymorphism of some *p*-alkoxybenzoic and *p*-alkoxycinnamic acids.” By G. M. BENNETT and B. JONES.
- “ The constitution of Cherry Gum. Part I. Composition of Cherry Gum and structure of an aldobionic acid (*d*-glycuronosido 2-*d*-mannose) derived from it.” By J. K. N. JONES.
- “ Bacterial polysaccharides. Constitution of the dextrans formed from sucrose by *Leuconostoc dextranicum* and by *Betabacterium vermiforme* (Ward-Meyer).” By M. STACEY, with W. D. DAKER, S. PEAT. and (Miss) E. SCHLÜCHTERER.

MEETINGS OUTSIDE LONDON

LECTURES AT BIRMINGHAM UNIVERSITY.

A joint meeting of the Chemical Society and the Birmingham University Chemical Society was held at 5 p.m. on Monday, January 23rd, 1939, in the Chemistry Lecture Theatre of the University.

The Chairman, Professor W. N. Haworth, introduced the speaker, Professor C. R. Harington, M.A., Ph.D., F.R.S., who gave an address on “ Recent Synthetic Studies in

Immunochemistry." Professor Harington prefaced his remarks with a brief review of the fundamentals of immunology, and then proceeded with a succinct and illuminating account of the progress made in the synthesis of antigens by chemical methods. These methods consist in the introduction into the protein molecule of haptene groups such as glucosyl-tyrosine, thyroxine, aspirin. In this way, antigenic properties are conferred upon proteins such as gelatine and insulin which are normally non-antigenic.

A vote of thanks, proposed by Dr. M. Stacey and seconded by Dr. F. Smith, was enthusiastically carried by a large audience.

A joint meeting of the Chemical Society and the Birmingham University Chemical Society was held at 5 p.m. on Monday, January 30th, 1939, in the Chemistry Department, Birmingham University. Professor W. N. Haworth, F.R.S., was in the Chair and Professor J. L. Simonsen, F.R.S., delivered a lecture on "The Structure of Sesquiterpenes and their Derivatives."

After an admirable survey of present views on the subject, the Lecturer dealt particularly with the constitution and synthesis of cyperone in regard to the position of the angle methyl group. Thereafter the interest which attaches to the chemistry of eremophilone and its derivatives was shown to lie in its apparent contradiction of the "isoprene rule." The ultimate formation of *o*-xylene from hydroxy eremophilone raises the question of the accuracy of the constitution of all eudalene derivatives.

A vote of thanks proposed by Dr. S. Peat and seconded by Dr. L. N. Owen was carried with acclamation.

LECTURE AT THE UNIVERSITY COLLEGE OF NORTH WALES, BANGOR.

A joint meeting with the College Chemical Society was held in the Lecture Theatre on Friday, February 3rd, 1939, at 5.30 p.m., Mr. R. R. Pritchard, B.Sc., being in the Chair. Professor J. Masson Gulland, M.A., D.Sc., opened a lecture on "Nucleic Acids," by outlining the constitution of the four nucleotides obtained from yeast nucleic acid, and proceeded to discuss the degradative and synthetical investigations of the mode of combination of these units in the parent substance. Some discussion followed, and the Lecturer was warmly thanked for his illuminating exposition of the subject.

Summary of Proceedings of the COUNCIL MEETING held on January 19th, 1939.

(No reference is made to matters which have already been reported in the Proceedings for January and February, 1939.)

Professor F. G. DONNAN was in the Chair, and the number present was 24.

It was reported that the death of Colour-Sergeant G. W. Holland, who was Commissioner to the Society from October 1902 to September 1926, took place on December 13th, 1938. The General Secretary was directed to convey the sympathy of the Council to his widow. It was agreed to pay her a pension of £80 a year during her lifetime.

It was reported that Dr. A. S. Russell had accepted the invitation to give the Urbain Memorial Lecture.

The cordial thanks of the Council were conveyed to Dr. Irving Langmuir for giving the Seventeenth Faraday Lecture, entitled "Monolayers on Solids," on December 15th.

It was reported that under the Will of the late Mr. William S. Gilles, one-fourth part of the residue of his estate had been left to the Chemical Society for the general purposes of the Research Fund.

Obituary notices of recently deceased Fellows were considered.

The resignations of 38 Fellows were accepted, the name of one Fellow was removed from the List of Fellows for non-payment of annual subscriptions, and 25 candidates were elected as Fellows.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objections to the election of any of these candidates should communicate with the Honorary Secretaries not later than Monday, March 13th, 1939. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

Barrett, Henry, B.Sc.Eng. (Lond.), British, 54, Parkview Road, Croydon. Chief Inspector, Post Office Engineering Department.

Signed by : E. de Barry Barnett, R. A. E. Galley, N. F. Goodway.

Caro, William Albert, B.Sc.Hons. (Manc.), British, 63, Musters Road, West Bridgford. Headmaster, West Bridgford Modern School.

Signed by : Frederick Challenger, G. N. Burkhardt, Colin Campbell, F. Fairbrother.

Fowler, Kenneth Sydney, B.Sc.Hons. (Reading), British, 43, Wilderness Road, Earley, Reading. Research Student at University of Reading.

Signed by : H. Bassett, Arthur K. Mills, Thomas H. Goodwin.

***Gascoyne-Cecil, Rupert Arthur Victor**, British, Downham House, Billericay. Undergraduate at Balliol College, Oxford.

Signed by : Ronald P. Bell, Bernard G. Harvey, Timothy J. Bligh.

Grieve, John Lambert, B.Sc. and Ph.D. (Edin.), British, Research Department, British Dyestuffs Corporation, Hexagon House, Blackley, Manchester. Research Chemist at I.C.I.

Signed by : P. G. Carter, D. A. Peak, E. Haworth.

Henneman, Isaac, Pharmaceutical Chemist, Diploma in Biochemical Analysis, British, 176, Charlton Road, S.E. 7. Chief Superintending Chemist at Royal Arsenal Co-operative Society engaged on general research. Director of Inkster, Ltd., Sutton, wholesale and retail chemists.

Signed by : F. H. Webb, Charles H. Maile, Arthur Mortimer.

Holder, Eldred John, B.Pharm. (Lond.), Ph.C., M.P.S., British, 27, House o'Hill Crescent, Edinburgh, 4. Managing Director, Messrs. G. F. Merson, Ltd., Edinburgh.

Signed by : G. F. Merson, J. J. Blackie, William Mair.

***Holliday, Leslie**, Harrison Scholar, Oriol College, British, Oriol College, Oxford. Student of Chemistry.

Signed by : Ronald P. Bell, S. G. P. Plant, D. Ll. Hammick, F. M. Brewer.

***Minnis, John Wilson**, British, 108, East Trinity Road, Edinburgh, 5. Undergraduate Student in 3rd year of B.Sc. course at University of Edinburgh.

Signed by : H. Gordon Rule, T. R. Bolam, J. A. V. Butler.

Niyogi, Purna Chandra, B.Sc. (Lond.), Indian, Department of Chemistry, St. Xavier's College, 30, Park Street, Calcutta. Head Demonstrator in Chemistry at St. Xavier's College.

Signed by : C. K. Ingold, E. H. Ingold, C. L. Wilson, E. D. Hughes.

***Ozers, Ewald**, Czechoslovakian, 9, Glenilla Road, N.W. 3. Research Student.

Signed by : C. L. Wilson, C. K. Ingold, Henry Terrey.

Saboor, Muhammad Abdus, B.Sc.Hons. and M.Sc. (Dacca), British Indian, 23, Glenmore Road, N.W. 3. Chemical Assistant, Industrial Research Bureau, Government of India. Formerly Lecturer in Soil Chemistry, Rajshahi College, Bengal. At present working in University College, London.

Signed by : R. J. W. Le Fèvre, C. K. Ingold, S. Sugden.

Siddall, Walter, B.Sc.Hons. (Lond.), British, 40, Mayfield Road, Northampton. Lecturer in Chemistry at the College of Technology, Northampton.

Signed by : E. B. R. Prideaux, R. Cuthill, D. Plews.

Sim, William Stuart, B.Sc.Hons. (Edin.), British, 26, St. Albans Road, Edinburgh, 9. Research Student at Edinburgh University.

Signed by : T. R. Bolam, E. G. V. Percival, J. A. V. Butler.

Subramaniam, Toppur Seethapathy, B.A. (Madras), M.Sc. (Benares Hindu University), Ph.D. (L'pool), A.I.C., Indian. Top Flat, 49, Huskisson Street, Liverpool, 8. Research Assistant, Organic Chemistry Department, University of Liverpool.

Signed by : A. McGookin, R. A. Morton, A. Robertson.

UNDER SPECIAL PROVISIONS APPERTAINING TO FELLOWS RESIDENT ABROAD :

Butler, George Herbert, Member S.A. Chemical Institute, A.I.C., British, 19, Holmes Road, Durban. Chemist. Over 20 years' experience as Chemist in Fertilizer and Chemical Works.

Signed by : C. D. Golding.

Gilbert, Wilfred, A.I.C., A.M.C.T., British, Chanch, Barakar P.O., E.I.R., Bengal. Works Manager and Ceramic Chemist.

Signed by : A. Eric J. Vickers.

Kuhn, Wayne Edward, B.A. (Reed College), Ph.D. (Cornell), American, The Texas Company, 135, East 42nd Street, New York. Manager, Technical and Research Division. Refining Department, The Texas Company.

Signed by : J. G. Detwiler.

***Nandi, Sambhu Nath**, B.Sc.Hons. (Calcutta), Bengali-Hindu, 9, Hyat Khan Lane, Calcutta. Post-graduate student at Presidency College, Calcutta.

Signed by : J. C. Bardhan.

* Reduced annual subscription.

NOTICES

THIRD CONFERENCE ON INDUSTRIAL PHYSICS.

The Third Conference on Industrial Physics is being arranged by the Institute of Physics to take place in Leeds from March 23rd to 25th next under the Presidency of Professor R. Whiddington. The subject of the Conference is to be "Physics in the Textile Industries." An Exhibition of instruments, apparatus and books cognate to this subject is being arranged and will be held in the Physics Laboratories of the University of Leeds. A section of the Exhibition, intended to be of special interest to non-technical physicists, will be devoted to popular applications of physics in the textile industries. The programme will include an address by the President of the Institute of Physics, Dr. C. C. Paterson, on "Colour and Colour Rendering," and an address by Dr. C. G. Darwin, Director of the National Physical Laboratory. In addition, lectures and discussions on the following subjects are being arranged: "The Physics for Humidity," "Industrial Humidity Control and Measurement," "The Contribution of Physics to the Development of Industrial Process Control," "Automatic Regulators for the Textile Industries." It is intended that the lectures and discussions shall be informal in character; they will deal particularly with applications of the subject to industrial problems. Visits to local works and research laboratories will be included in the programme and a Conference dinner is being arranged. There will be no Conference fee and membership is open to all interested. Further particulars may be obtained from the Secretary, The Institute of Physics, 1 Lowther Gardens, Exhibition Road, London, S.W. 7.

BOARD OF TRADE.

Representation has been made to the Board of Trade regarding the exemption of "Dimethylamine" from the duty imposed by the Safeguarding of Industries Act, 1921. Communications should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W. 1, before March 14th, 1939.

PAPERS RECEIVED

List of papers received between January 19th and February 16th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "The constitution of caryophyllene. Part II. Some oxidation reactions of caryophyllene and dihydrocaryophyllene." By H. N. RYDON.
- "The dipole moments of *cis*- and *trans*-azobenzenes and of some related compounds." By G. S. HARTLEY and R. J. W. LE FÈVRE.
- "Dielectric polarisation data for the allegedly isomeric 4:4'-dihydroxyazobenzenes of Willstätter and Benz." By I. DOSTROVSKY and R. J. W. LE FÈVRE.
- "The dipole moment and configuration of arsenobenzene." By R. J. W. LE FÈVRE and C. A. PARKER.
- "The alleged optical activity of *o*-toluidine-3:5-disulphonic acid." By P. P. HOPF and R. J. W. LE FÈVRE.
- "Anionotropic and prototropic changes in cyclic systems. Part VI. *cis*- and *trans*-3:4-Diphenylcyclopentanones. The structure of the ketone obtained by reduction of 2-hydroxy-3:4-diphenyl- Δ^2 -cyclopentenone with hydriodic acid." By H. BURTON and C. W. SHOPPEE.
- "Substituted ketocholanic acids." By S. BERGSTRÖM and G. A. D. HASLEWOOD.
- "Studies on vitamin E. Part VI. Synthesis of lower homologues of α -tocopherol." By (Miss) A. JACOB, (Miss) M. STEIGER, A. R. TODD, and T. S. WORK.
- "The preparation of azo-compounds in *cis*- and *trans*-forms, and a note on the benzidine transformation." By H. H. HODGSON, E. MARSDEN, and W. DAVEY.
- "The structure and synthesis of croweacin." By W. BAKER, A. R. PENFOLD, and J. L. SIMONSEN.
- "Isomorphous replacement in hydrated salts. Part I. The systems $\text{CoCl}_2\text{-CuCl}_2\text{-H}_2\text{O}$; $\text{CdCl}_2\text{-NiCl}_2\text{-H}_2\text{O}$; $\text{CdCl}_2\text{-CoCl}_2\text{-H}_2\text{O}$." By H. BASSETT, J. H. HENSHALL, G. A. SERGEANT, and R. H. SHIPLEY.
- "Isomorphous replacement in hydrated salts. Part II. The system $\text{NaCl-CdCl}_2\text{-H}_2\text{O}$ and the formation of solid solutions in the systems $\text{NaCl-CdCl}_2\text{-NiCl}_2\text{-H}_2\text{O}$ and $\text{NaCl-CdCl}_2\text{-CoCl}_2\text{-H}_2\text{O}$." By H. BASSETT, J. H. HENSHALL, and G. A. SERGEANT.
- "Dimethyl phosphates of the rare earths." By J. K. MARSH.
- " α -Amino- β -(4-methylthiazole-5)-propionic acid; a possible precursor of aneurin." By C. R. HARRINGTON and R. C. G. MOGGRIDGE.
- "Pectic substances. Part II. Isolation of an araban from the carbohydrate constituents of the pea-nut." By E. L. HIRST and J. K. N. JONES.
- "Pectic substances. Part III. Composition of apple pectin and the molecular structure of the araban component of apple pectin." By E. L. HIRST and J. K. N. JONES.
- "Electrical conductivities of dilute solutions of sodium dodecyl sulphate in ethyl alcohol-water mixtures at 20°." By A. F. H. WARD.
- "The constitution of the tetrapolymer of hydrogen cyanide." By L. E. HINKEL.
- "The synthesis of di-tertiary arsines. *Meso*- and racemic forms of bis-4-covalent-arsenic compounds." By J. CHATT and F. G. MANN.
- "The saponin of *Sarcoslemma australe*, R. Br." By J. W. CORNFORTH and J. C. EARL.
- "3-Nitro- and 3-amino-4-hydroxybenzenesulphonamide." By W. O. KERMACK, W. T. SPRAGG, and W. TEBRICH.
- "Strychnine and brucine. Part XLI. Re-examination of the action of bromine on diketonucidine and its bearing on the structure of the alkaloids." By H. L. HOLMES and R. ROBINSON.
- "The systems sodium chloride-butyric acid-water, sodium chloride-*isobutyric* acid-water, and potassium *isobutyrate-isobutyric* acid-water at 25°." By C. R. BURY and J. R. MENDS.
- "Marrubiin, the bitter principle of hore-hound (*Marrubium vulgare*)." By A. LAWSON.

- “Built-up films of unsaturated and substituted long-chain compounds.” By A. E. ALEXANDER.
- “The constitution of arabic acid. Part I. The isolation of 3-*d*-galactosido-*l*-arabinose.” By F. SMITH.
- “2 : 3-Dimethyl *l*-arabinose and its derivatives.” By F. SMITH.
- “The triterpene group. Part V. Some oxidation products of the β -amyrin derivative $C_{30}H_{44}OS$.” By J. C. E. SIMPSON.
- “Furano-compounds. Part II.” By R. T. FOSTER and A. ROBERTSON.
- “Furano-compounds. Part III. Euparin.” By B. KAMTHONG and A. ROBERTSON.
- “The preparation and reactions of some arylsulphonylbenzisothiazolones.” By R. G. BARTLETT, L. E. HART, and E. W. McCLELLAND.
- “The organic compounds of gold. Part VII. Methyl and ethyl compounds.” By F. H. BRAIN and C. S. GIBSON.
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ADDITIONS TO THE LIBRARY.

I. *Donations.*

AMBARD, L., and TRAUTMANN, S. *Mécanisme des réactions fermentaires : son étude sur l'amylase et l'invertine.* Paris 1937. pp. iv + 103. *Fr.* 35. (*Recd.* 23/1/39.)

From Dr. E. F. Armstrong, F.R.S.

BERNAL, J. D. *The social function of science.* London 1939. pp. xviii + 482. ill. 12s. 6d. net. (*Recd.* 8/2/39.) From the Publishers : Messrs. George Routledge & Sons.

BOYS, SIR CHARLES VERNON. *Weeds, weeds, weeds.* 2nd edition. London 1938. pp. 113. 2s. (*Recd.* 14/1/39.)

From the Publishers : Messrs. Wightman & Co.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Memoirs of the Geological Survey of Great Britain. The water supply of the County of London from underground sources.* By STEVENSON BUCHAN. London 1938. pp. vi + 260. ill. (*Reference.*) 6s. net.

From the Department.

ELLIS, O. C. DE C. *A history of fire and flame.* London 1932. pp. xxiv + 436. ill. 15s. net. (*Recd.* 14/2/39.)

GEORGIA EXPERIMENT STATION. *50th Annual Report, for the year 1937-38, etc. Experiment, Ga. 1938 +.* (*Reference.*)

From the Society of Public Analysts.

HADDAN, REGINALD. *Trade marks and their protection under the Trade Marks Act, 1938, with notes on protection abroad.* London 1938. pp. viii + 128. 5s. net. (*Recd.* 14/1/39.)

From the Publishers : Sir Isaac Pitman & Sons.

KERMACK, W. O., and EGGLETON, P. *The stuff we're made of.* London 1938. pp. viii + 342. ill. 7s. 6d. net. (*Recd.* 13/2/39.)

From the

Publishers : Messrs. Edward Arnold & Co.

MADRAS, CORPORATION OF. *Annual Report of the Public Analyst for the year 1937, etc. Madras 1938 +.* (*Reference.*)

From the Society of Public Analysts.

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London Publishers : Messrs. Macmillan & Co.

PALESTINE. *Department of Health. Annual Report for the year 1937, etc., Jerusalem 1938 +.* (*Reference.*)

From the Society of Public Analysts.

SCHÜLEIN, JULIUS. *Die Bierhefe als Heil, Nähr- und Futtermittel.* 2nd edition. Dresden 1938. pp. viii + 262. ill. *M.* 11. (*Recd.* 23/1/39.)

From Dr. E. F. Armstrong, F.R.S.

SIAM. *Ministry of Economic Affairs. Department of Science. 8th Report, 1934-36, etc. Bangkok 1938 +.* (*Reference.*)

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From Dr. E. F. Armstrong, F.R.S.

II. *By purchase.*

DESCH, H. E. *Timber, its structure and properties.* London 1938. pp. xxii + 169. ill. 12s. 6d. net. (*Recd.* 16/2/39.)

FERCHL, FRITZ, and SÜSSENGUTH, A. *A pictorial history of chemistry.* Translated from the German. London 1939. pp. viii + 214. ill. 25s. net. (*Recd.* 16/2/39.)

FINDLAY, G. M. *Recent advances in chemotherapy.* 2nd edition. London 1939. pp. x + 524. 21s. net. (*Recd.* 16/2/39.)

GRANT, JULIUS. *Wood pulp.* Leiden 1938. pp. xii + 209. *Fl.* 7. (*Recd.* 16/2/39.)

KARRER, PAUL. *Organic chemistry.* Translated from the latest German edition by A. J. MEE. Amsterdam 1938. pp. xxii + 902. ill. 45s. net. (*Recd.* 16/2/39.)

LATIMER, WENDELL M. *The oxidation states of the elements and their potentials in aqueous solutions.* New York 1938. pp. xiv + 352. \$3. (*Recd.* 16/2/39.)

LUNDELL, G. E. F., and HOFFMAN, JAMES IRVIN. *Outlines of methods of chemical analysis.* New York 1938. pp. xii + 250. ill. \$3. (*Recd.* 16/2/39.)

MARSH, J. S. *The alloys of iron and nickel. Vol. I. Special-purpose alloys.* New York 1938. pp. xii + 593. ill. \$6. (*Recd.* 16/2/39.)

MELLON, RALPH R., GROSS, PAUL, and COOPER, FRANK B. *Sulfanilamide therapy of bacterial infections.* Springfield, Ill. 1938. pp. xiv + 398. \$4. (*Recd.* 16/2/39.)

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MOYER, JAMES A., and FITZ, RAYMOND U. *Air conditioning.* 2nd edition. New York 1938. pp. x + 455. ill. \$4. (*Recd.* 16/2/39.)

SHOENBERG, D. *Superconductivity.* Cambridge 1938. pp. x + 112. ill. 6s. net. (*Recd.* 16/2/39.)

SWEETSER, RALPH H. Blast furnace practice. New York 1938. pp. x + 356. ill. \$4. (*Recd.* 16/2/39.)

TREASE, G. E. A text-book of pharmacognosy. 3rd edition. London 1938. pp. x + 740. ill. 21s. net. (*Recd.* 16/2/39.)

TURNER, T. HENRY, and BUDGEN, N. F. Metal spraying. 2nd edition, revised and largely re-written by E. C. ROLLASON. London 1939. pp. xvi + 235. ill. 15s. net. (*Recd.* 16/2/39.)

TYNDALL, A. M. The mobility of positive ions in gases. Cambridge 1938. pp. x + 93. ill. 6s. net. (*Recd.* 16/2/39.)

WAKSMAN, SELMAN A. Humus: origin, chemical composition, and importance in nature. 2nd edition. [Baltimore] 1938. pp. xiv + 526. ill. \$6.50. (*Recd.* 16/2/39.)

WEHRICH, ROBERT. Die chemische Analyse in der Stahlindustrie. 2nd edition of J. KASSLER "Untersuchungsmethoden für Roheisen, Stahl und Ferrolegierungen." (Die chemische Analyse, Vol. XXXI.) Stuttgart 1938. pp. xvi + 208. ill. (*Reference.*) *M.* 19.60.

WHITTAKER, C. M., and WILCOCK, C. C. Dyeing with coal tar dyestuffs. 3rd edition. London 1939. pp. viii + 325. 12s. 6d. net. (*Recd.* 16/2/39.)

III. Pamphlets.

BREDIG, GEORG. Seinen Freunden zur Erinnerung. [Köthen] 1938. pp. [41].

BRITISH STANDARDS INSTITUTION. British

Standard Specifications. Nos. 282 and 389—1938. Lead chromes and zinc chromes for paints. (Revised.) pp. 17.

— — — No. 388—1938. Aluminium (powder and paste) for paints. (Revised.) pp. 14.

— — — No. 390—1938. Oil pastes for paints, excluding white lead, zinc oxide and lithopone oil pastes. (Revised.) pp. 16. ill.

— — — No. 823—1938. Density-composition tables for aqueous solutions of sodium chloride and of calcium chloride for use in conjunction with British standard density hydrometers. pp. 36.

— — — No. 824—1938. Density-composition tables for aqueous solutions of caustic soda for use in conjunction with British standard density hydrometers. pp. 47.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Two lectures on the development of the chemistry of commercial synthetic dyes (1856—1938). By FREDERICK MAURICE ROWE. London 1938. pp. ii + 106.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Publications. No. 89. Tin and its alloys in dental practice. By F. C. THOMPSON and N. WILD. London 1939. pp. 18.

KRAFT, CARL F. The chemical organization of living matter. 2nd edition. [Washington] 1938. pp. 28.

UNITED STATES. *Federal Power Commission*. Power requirements in electrochemical, electrometallurgical and allied industries. Washington 1938. pp. iv + 125. ill.

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETINGS IN LONDON.

Thursday, April 20th, 1939, at 8 p.m.

Meeting for the reading of original papers.

Thursday, May 4th, 1939, at 5 p.m. and not 5.30.

Joint Discussion with the **Physical Society** and the **Royal Meteorological Society** on "The Upper Atmosphere," to be held in the **Lecture Theatre of the Royal Institution, Albemarle Street, W. 1**, on Thursday, May 4th, 1939, at 5 p.m., by the courtesy of the Managers. To be opened by Professor F. A. Paneth, Ph.D., with a brief exposition of the ground to be covered by the Discussion, defining its limits. The following have agreed to take part, and at the end of their contributions the subject will be thrown open to general discussion:

The Upper Atmosphere.

A. Composition.

Professor F. A. Paneth, Ph.D. (Durham). Direct chemical investigations.

Professor S. Chapman, M.A., D.Sc., F.R.S. (London). Spectroscopic and other evidence as to chemical composition and dissociation.

Dr. G. M. B. Dobson, M.A., F.R.S. (Oxford). The vertical distribution of ozone.

B. Density and Temperature.

Dr. F. J. W. Whipple, M.A., F.Inst.P. (Kew). Direct measurements and Sound evidence.

Professor F. A. Lindemann, M.A., Ph.D., F.R.S. (Oxford). Meteor evidence.

Professor E. V. Appleton, M.A., D.Sc., F.R.S. (London). Radio evidence.

Thursday, May 18th, 1939, at 6 p.m.

Seventh Liversidge Lecture, entitled "Some Considerations on the Nature of Catalysis," by Professor C. N. Hinshelwood, M.A., Sc.D., F.R.S., to be delivered in the Lecture Hall of the **Institution of Mechanical Engineers, Storey's Gate, S.W. 1**.

MEETING OUTSIDE LONDON.

NEWCASTLE AND DURHAM.

Monday, May 8th, 1939, at 6.45 p.m. **Bedson Lecture** on "Water Pollution," by Sir Robert Robertson, K.B.E., D.Sc., F.R.S., in the **Chemistry Lecture Theatre at King's College, Newcastle-on-Tyne**.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

**Minutes of a
SCIENTIFIC MEETING**

**held at the Imperial College, S. Kensington, S.W. 7, on Thursday, March 2nd, 1939,
at 5.30 p.m.**

The PRESIDENT, Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the visitors present.

The minutes of the Scientific Meeting of February 16th, 1939, appearing in the *Proceedings* for February, were taken as read, and were confirmed and signed.

The following announcement was made :

NOMINATIONS FOR VACANT PLACES ON THE COUNCIL.

As the number of nominations received for Vice-Presidents who have not filled the office of President and for Elected Ordinary Members of Council does not exceed the number of vacancies, the need for a ballot does not arise this year.

The following is a complete list of the nominations for the new Council, and, in accordance with Bye-Law 35, the Fellows thus nominated will be declared duly elected at the Annual General Meeting to be held in the Society's Rooms at Burlington House, Piccadilly, on Thursday, 30th March, 1939, at 2.30 p.m.

President :	<i>(One vacancy)</i>	*SIR ROBERT ROBINSON.
Treasurer :	<i>(One vacancy)</i>	*F. P. DUNN.
Honorary Secretary :	<i>(One vacancy)</i>	*G. M. BENNETT.

Prof. F. G. DONNAN, as retiring President, becomes a Vice-President who has filled the office of President.

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

I. M. HEILBRON.	E. K. RIDEAL.
J. KENYON.	S. SUGDEN.

Elected Ordinary Members of Council :

(a) **Constituency I. S.E. England.** (*Two vacancies.*)

E. J. BOWEN.	(Oxford.)
*H. J. T. ELLINGHAM.	(London.)

(b) **Constituency II. Central and S.W. England and S. Wales.** (*Three vacancies.*)

H. T. S. BRITTON.	(Exeter.)
J. E. COATES.	(Swansea.)
E. L. HIRST.	(Bristol.)

* Nominated by Council.

- (c) **Constituency III. N.W. England, N. Wales and Isle of Man.** (*Two vacancies.*)
 J. KENNER. (Manchester.)
 A. R. TODD. (Manchester.)
- (d) **Constituency IV. N.E. England.** (*One vacancy.*)
 H. L. RILEY. (Newcastle-on-Tyne.)
- (e) **Constituency V. Scotland.** (*One vacancy.*)
 A. FINDLAY. (Aberdeen.)

FORMAL ADMISSION OF FELLOWS.

The following were formally admitted Fellows of the Chemical Society: Mostafa M. Hafez, D. Parker Riley, C. G. Eliot, P. A. Wilkinson, T. B. Whitefoot, John H. Gorvin, Edwin A. Shearing, Harold France, H. J. Dothie, and M. J. S. Dewar.

A Symposium on "Microtechnique in Organic Chemistry" was opened by Professor I. M. Heilbron. The discussion was continued by Mr. D. P. Riley (for Miss D. M. Crowfoot), Dr. J. Schulman (for Dr. Einar Stenhagen), Dr. A. H. Cook, Dr. H. Jackson, and Dr. D. Richter. At the conclusion of the meeting Mr. W. F. Boston gave an exhibition of his apparatus for micro-analysis.

The PRESIDENT expressed the thanks of the Society to the Governing Body of the Imperial College for the use of the Lecture Theatre and for hospitality.

Minutes of a SCIENTIFIC MEETING

held at Burlington House, London, W.1, on Thursday, March 16th, 1939, at 8 p.m.

The PRESIDENT, Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the visitors present.

The minutes of the Scientific Meeting of March 2nd, 1939, were read, and were confirmed and signed.

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

	Elected.	Died.
Harry M. Dawson	1900.	March 11th, 1939.
Stevenson J. C. G. Macadam.....	1888.	February 25th, 1939.
Eloi Ricard	1909.	January 29th, 1939.
Dennis Tyrrell	1903.	November 26th, 1938.

The following announcements were made:

1. HIS MAJESTY THE KING AS PATRON.

His Majesty The King has graciously consented to become Patron of The Chemical Society.

2. CONGRATULATIONS.

The congratulations of the Society have been conveyed to the following Fellows who completed 50 years of Fellowship on February 21st, 1939:

Edwin M. Chaplin.
 John W. Clayton.
 George A. Pingstone.

Harry H. Robins.
 Thomas J. Underhill.

3. ACKNOWLEDGEMENTS.

The Council have conveyed the thanks of the Society to the following :

- (a) Mrs. Emile Mond for presenting a Badge of Office, which will be worn at the discretion of the President.
- (b) Mr. E. W. Lucas, for presenting a copy of " The Chymist " by David Teniers, the younger, probably about 1670.
- (c) Professor P. Phillips Bedson, for a contribution of £5 5s. to the Centenary Fund to mark the completion of his 60 years of Fellowship.
- (d) Messrs. P. K. Dutt, H. G. Rule, and F. C. Smith for contributions to the Publications Fund.
- (e) Messrs. A. Bracher, F. S. H. Head, H. Hollings, and R. J. B. Marsden for copies of the Society's publications.

4. REPRESENTATION ON OTHER BODIES.

Mr. F. P. Dunn has been appointed by the Royal Society as a member of the British National Committee for Chemistry.

5. LOCAL REPRESENTATIVES.

The Council have accepted with regret the resignation of Dr. R. Raper from the office of Local Representative for Newcastle and have expressed their high appreciation of the services he has rendered to the Society. Dr. W. A. Waters has been appointed to fill the vacancy.

6. ELECTION OF FELLOWS.

The following candidates have been elected Fellows of the Chemical Society by the Council on March 16th, 1939 :

Henry Barrett.	Wayne Edward Kuhn.
George Herbert Butler.	Ernest Carl Edgar Kurth.
William Albert Caro.	John Wilson Minnis.
Francis Thomas Chorley.	Sambhu Nath Nandi.
Kenneth Sydney Fowler.	Purna Chandra Niyogi.
Rupert Arthur Victor Gascoyne-Cecil.	Ewald Osers.
Wilfred Gilbert.	Muhammad Abdus Saboor.
John Lambert Grieve.	Walter Siddall.
Isaac Henneman.	William Stuart Sim.
Eldred John Holder.	Toppur Seethapathy Subramanian.
Leslie Holliday.	

The following papers were read :

- " Infra-red spectra in the 3μ region of naphthalene, α - and β -methylnaphthalenes, quinoline, and isoquinoline : an aid to analysis." By J. J. FOX and A. E. MARTIN.
- " The stereochemistry of quadricovalent atoms : gold." By H. J. DOTHE, F. J. LLEWELLYN, W. WARDLAW, and A. J. E. WELCH.
- " The organic compounds of gold. Part VII. Methyl and ethyl compounds." By F. H. BRAIN and C. S. GIBSON.

MEETINGS OUTSIDE LONDON
LECTURE AT ABERDEEN.

A joint meeting of the Chemical Society and the Aberdeen Section of the Institute of Chemistry was held in the Chemistry Department, Marischal College, Aberdeen, on February 17th, 1939, when Professor James Kendall, F.R.S., gave a lecture entitled : " Ions and Isotopes." At the conclusion of the lecture a vote of thanks to the Lecturer, proposed by Mr. R. Craven, was carried unanimously. The meeting was followed by an informal dinner at the Palace Hotel, where Professor Kendall was the guest of honour.

LECTURE AT EDINBURGH.

A joint meeting of the Society with the local sections of the Society of Chemical Industry and the Institute of Chemistry took place on January 27th, 1939, in the North British Hotel. Dr. J. A. V. Butler was in the Chair, and Professor J. W. Cook, F.R.S., delivered a lecture on "Carcinogenic Chemical Compounds." The lecture was followed by a discussion in which Dr. Scott, Professor Marrian, Professor Muller, Drs. Kermack, Stedman, Hain, Michaelis, and Messrs. Cameron, Ramsay, and others took part. At the conclusion of the lecture a hearty vote of thanks to the Lecturer, proposed by Dr. E. G. V. Percival, was carried with acclamation.

LECTURE AT GLASGOW.

A meeting of the Society was held in Glasgow on February 17th, 1939, at which Dr. J. Monteath Robertson, M.A., delivered a lecture on "The Hydrogen Bond." Professor T. S. Patterson presided. Dr. Robertson briefly surveyed the chemical evidence leading to the conception of the hydrogen bond, and then discussed the bearing of recent experimental work, particularly by the X-ray method, on the problem. Intermolecular approach distances for typical associated and non-associated compounds were compared. When deuterium is substituted for hydrogen in the shorter types of hydrogen bond, the small expansion produced is to be expected on resonance theories, and can be accounted for by the smaller zero-point energy of the deuterium atom. An interesting discussion followed, and, on the motion of Dr. T. S. Stevens, a hearty vote of thanks was accorded to the Lecturer, and carried with acclamation.

LECTURE AT LIVERPOOL.

A meeting of the Society was held in the Chemistry Lecture Theatre of the University of Liverpool on February 6th, 1939, at 6 p.m., when Mr. D. C. Henry gave a lecture entitled "Electrocapillarity with special reference to liquids of low ionic content," of which the following is a summary :

The electrocapillary phenomenon is the variation of the interfacial tension between mercury and a conducting liquid with the electric polarisation imposed on the mercury surface by the application of an external E.M.F. The maximum interfacial tension corresponds to a polarisation just sufficient to annul the free surface charge in the electrical double layer at the interface; presumably the charge in question is to be taken as that originating in the adsorption of any ion, whether mercury or not, though this view is not universally admitted. In any case any contribution to the electric field from oriented dipoles is not included, and for this reason (among others), we may not infer that at the point of zero charge the potential difference between mercury and liquid also vanishes. In fact there are good grounds for the view that a "single electrode potential," as well as an "individual ion activity," are fictions with no physical significance.

With the object of investigating the relation between electrocapillarity and solvent polarity, experiments were made with liquids of low ionic content, using the sessile drop method with rigorous exclusion of oxygen. To obviate the high "ohmic correction" with liquids of low conductivity, an elaborate thermionic valve circuit was employed which permitted the polarisation to be measured during an extremely short ($\sim 10^{-4}$ sec.) intermission of the polarising current. With an oxygen-containing aqueous solution, the normal Gouy "primitive curve" can be duplicated. Under oxygen-free conditions the electrocapillary curves obtained with very pure water, dilute sodium sulphate solution and with methyl alcohol differ from the normal curves in that both the maximum and the unpolarised interfacial tensions are considerably higher; the whole curve is shifted on the potential axis and the anodic branch is less steep, though the cathodic branch tends to parallelism with that of the normal curve. No theoretical conclusions can yet be drawn.

**Summary of proceedings of the
COUNCIL MEETING
held on February 16th, 1939.**

(No reference is made to matters which have already been reported in the Proceedings for February and March, 1939.)

Professor F. G. DONNAN was in the Chair, and the number present was 22.

The report of the Finance and General Purposes Committee dealing with the Accounts of the Society and of the Bureau for 1938, with vacancies on the Council and Joint Library Committee, and the draft Report of Council, was considered.

A report of a Committee appointed to consider Air Raid Precautions was received, and it was agreed that in the case of a national emergency, the Society should in the first instance discontinue its meetings and publications and that the Library should be closed.

The President in office and Dr. H. J. T. Ellingham were appointed to represent the Society at the International Geological Congress to be held in London from July 31st to August 8th, 1940.

Obituary notices of recently deceased Fellows were considered, and it was agreed that a Memorial Lecture should be given in honour of Professor Dr. G. Tammann.

The resignations of nine Fellows were accepted, one candidate was reinstated as a Fellow, and 24 candidates were elected as Fellows.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objections to the election of any of these candidates should communicate with the Honorary Secretaries not later than Monday, 17th April, 1939. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

***Beaven, Gilbert Henry**, B.Sc.Hons. (Bristol), British, 2, South Place, Redcliffe, Bristol, 1. Research Student.

Signed by : E. B. Maxted, G. T. Young, E. L. Hirst, J. K. N. Jones, W. E. Garner.

Birtwistle, William Kenyon, Assoc.M.C.T., British, 126, Ormerod Street, Accrington. Assistant Research Chemist with Calico Printer's Association, Ltd.

Signed by : G. Baddeley, R. F. Garwood, R. J. W. Reynolds.

Chrétien, André, Docteur ès Sciences, French, Institut de Chimie, 2 rue Goethe, Strasbourg. Professor of Mineral Chemistry at the Faculty of Sciences of the University of Strasbourg.

Signed by : L. Hackspill, F. G. Donnan, H. J. T. Ellingham.

Cortis-Jones, Beverly, M.Sc. (Sydney), British, 25, Carlton Hill, N.W. 8. Research Chemist, Medical Unit, London Hospital.

Signed by : C. J. O. R. Morris, J. R. Marrack, D. A. Duff.

Fontaine, Andrew Douglas Algernon Maclean, British, Narford Hall, King's Lynn. Student at Magdalene College, Cambridge, reading for Part I of Natural Science Tripos.

Signed by : B. C. Saunders, N. B. Chapman, J. B. Whitworth.

***Goddard, Kathleen Mary**, B.A. (Cantab.), British, High Lawn, Holroyd, Glossop. Research Assistant in Laboratories of Messrs. J. Lyons and Co., Ltd.

Signed by : R. G. W. Norrish, E. A. Moelwyn-Hughes, F. G. Mann.

Leah, Amy Smeeton, B.Sc.Hons. (Leeds), British, 207, Beeston Road, Leeds, 11. Research Student.

Signed by : Frederick Challenger, R. Whytlaw-Gray, W. Lowson, J. W. Baker.

Lockwood, William Hutton, B.Sc. (Sydney), British, Royal North Shore Hospital, St. Leonards, N.S.W. Assistant Research Biochemist at Royal North Shore Hospital.

Signed by : J. C. Earl, Rita H. Harradence, Adrien Albert.

* Reduced annual subscription.

Mason, Frank Hamilton, British, Clarence House, Ebberston, nr. Scarborough. 3rd Stage Inorganic Chemistry and Metallurgy, Board of Education (1911), Iron and Steel Practice, City and Guilds (1910), 14 years works experience. Retired—late of Sir W. G. Armstrong Whitworth and Co., Ltd., Openshaw Works, Manchester.

Signed by : Frederick Challenger, James Colvill, John O. Smith, J. W. Baker, William Wild.

Morrison, Thomas John, B.Sc. and Ph.D. (St. Andrews), A.I.C., British, 19, Park View, Wigan. Lecturer in Chemistry at Wigan and District Mining and Technical College.

Signed by : Arnold Cooksey, T. Heap, John D. M. Ross.

***Parkes, Ursula Marion**, B.Sc. (Lond.), British, Garth, Coleokes Road, Banstead. Analytical Chemist with Messrs. J. Lyons and Co., Ltd.

Signed by : T. S. Moore, M. M. T. Plant, E. M. W. Hedley.

Powell, Edward Owen, B.A. and B.Sc. (Oxon.), British, 78, Southwick Street, Southwick. Two years' research work under Sir Robert Robinson, F.R.S., latterly as his assistant (Sept. 1936–Nov. 1938). Research Chemist in laboratories of Messrs. Shepherd's Industries, Ltd., Portslade.

Signed by : D. Ll. Hammick, E. Hope, W. Baker.

Reich, Watroslav Slavko, Dr.phil. (Berlin), French, Institut de Biologie physico-chimique, 13, rue Pierre Curie, Paris V^e. Assistant in the Kaiser Wilhelm Institut für Faserstoffchemie, 1927–1930. Assistant in the Institut de Biologie, Paris, from 1930; chargé de recherches since 1937.

Signed by : Robert Robison, Arthur Harden, Walter T. J. Morgan.

***Smith, Arthur Ernest Wilder**, B.Sc.Hons. (Reading), British, Kentwood, Cholsey, Berks. Research Student for Ph.D. Student Demonstrator at Reading University, 1938–1939.

Signed by : Arthur K. Mills, H. Bassett, D. Roy Maxted.

Wells, Alexander Frank, M.A. (Oxon.), Ph.D. (Cantab.), British, Crystallographic Laboratory, Free School Lane, Cambridge. Research in X-Ray Crystallography.

Signed by : F. G. Mann, J. Chatt, W. Cule Davies.

* Reduced annual subscription.

NOTICES

LEATHER TRADES' CHEMISTS CONFERENCE, 1939.

The Biennial Conference of Leather Trades' Chemists will be held in London from August 27th to September 1st next at the Polytechnic, Regent Street, London, W. 1. The Conference is being arranged by the British Section of the International Society of Leather Trades' Chemists. Leather Chemists from France, Germany, Belgium, Italy, Switzerland, Denmark, Sweden, Norway, and the United States are expected.

On August 27th there will be an informal reception. On August 28th in the morning, Dr. W. T. Astbury, M.A., F.Inst.P., will deliver the First Procter Memorial Lecture, entitled "The Molecular Structure of Fibres of the Collagen Group."

A complete list of the papers to be read will be published later. To overcome the language difficulty of an international gathering, abstracts of papers to be read will be available in English, French, and German. A number of scientific films will also be shown. A Banquet will take place on August 30th at Park Lane Hotel, Piccadilly, W. 1, and September 1st will be devoted to a whole day tour to Stoke Poges, Eton, and Windsor. A programme of entertainment for lady visitors is being arranged. Further details can be obtained from the Hon. Secretary, British Section, I.S.L.T.C., 17, Leathermarket Street, London, S.E.1.

BOARD OF TRADE.

The Treasury have made an order under Section 10(5) of the Finance Act, 1926, exempting Maleic acid and Maleic anhydride from Key Industry Duty from March 8th, 1939, until December 31st, 1939.

Copies of the Treasury Order, which is entitled The Safeguarding of Industries (Exemption) No 1 Order, 1939, may be obtained from H.M. Stationery Office.

BRITISH STANDARDS INSTITUTION.

Copies of draft British Standard Specification No. CE (C) 1017 for Hæmoglobinometers have been received from the British Standards Institution, 28, Victoria Street, London, S.W.1, for technical comment. These have been placed in the Library, and Fellows are invited to send comments to the Director of the British Standards Institution by September 9th, 1939.

PAPERS RECEIVED

List of papers received between February 16th and March 16th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "The resolution of inactive alcohols by means of their esters with tartranilic acid." By F. BARROW and R. G. ATKINSON.
- "*N*-Oximino-ethers. Part IV. Formation of oximino-ethers in the Ehrlich-Sachs reaction." By F. BARROW and F. J. THORNEYCROFT.
- "*N*-Oximino-ethers. Part V. Stereoisomeric *N*-aryl ethers of oximinophenylacetonitrile." By F. BARROW and F. J. THORNEYCROFT.
- " ω -Trichloro- and ω -dichloro- α -picoline." By P. DYSON and D. LL. HAMMICK.
- "The influence of solvents and of other factors on the rotation of optically active compounds. Part XXXVII. Asymmetric solvent action (2)." By T. S. PATTERSON, A. H. LAMBERTON, and R. M. CUNNINGHAM.
- "The dissociation constants of the isomeric halogenobenzoic and nitrobenzoic acids." By H. O. JENKINS.
- "The mechanism of decarboxylation. Part II. The production of cyanide-like ions from α -picolinic, quinaldinic, and *iso*quinaldinic acids." By M. R. F. ASHWORTH, R. P. DAFFERN, and D. LL. HAMMICK.
- "An *X*-ray and thermal examination of the glycerides. Part V. Unsymmetrical mixed triglycerides, $\text{CH}_2(\text{O}\cdot\text{COR})\cdot\text{CH}(\text{O}\cdot\text{COR}')\cdot\text{CH}_2(\text{O}\cdot\text{COR}'')$." By M. G. R. CARTER and T. MALKIN.
- "Studies of the active principles of leguminous fish poison plants. Part I. The properties of *l*- α -toxicarol isolated from *Derris malaccensis* (Kinta type)." By S. H. HARPER.
- "The kinetics of the esterification of normal fatty acids." By R. A. FAIRCLOUGH and C. N. HINSHELWOOD.
- "The condensation of β -methyl-naphthalene with acetyl chloride." By G. A. R. KON and W. T. WELLER.
- "Sapogenins. Part III. The dehydrogenation products of methylsarsasapogenin and methylcholestanol." By G. A. R. KON and A. M. WOOLMAN.
- "Reactions of tertiary bases with polyhalogeno-paraffins." By W. C. DAVIES, (MISS) E. B. EVANS, and H. R. WHITEHEAD.
- "Replacement of negative groups by halogen in the anthraquinone series." By F. H. DAY.
- "Halogenation of hydroxy- and amino-anthraquinonesulphonic acids." By F. H. DAY.
- "The thickness of air-formed oxide films on iron." By W. H. J. VERNON, F. WORMWELL, and T. J. NURSE.
- "Studies in water-in-oil emulsions. Part II. The interfacial and surface activities of magnesium and calcium oleates and the rôle played by these soaps in the stabilisation of water-in-oil emulsions." By R. C. PINK.
- "The interaction of sulphur monoxide with nitrous and nitric acids." By C. J. WILKINS and F. G. SOPER.
- "The optical rotary powers of (+) methylethyl-*n*-butylmethane." By J. KENYON and B. C. PLATT.

- "A synthesis of glucosamine." By W. O. CUTLER and S. PEAT.
- "The osmotic pressure of solutions of polysaccharide derivatives. Part I. A new form of osmometer." By S. R. CARTER and B. R. RECORD.
- "The osmotic pressure of solutions of polysaccharide derivatives. Part II. The osmotic pressure of derivatives of lichenin, inulin, glycogen, starch, and starch dextrin." By S. R. CARTER and B. R. RECORD.
- "Derivatives of the silyl radical. Part I. The reactions of monochlorosilane with aliphatic amines." By H. J. EMELÉUS and N. MILLER.
- "The bromination of some 4-quinolones." By H. P. W. HUGGILL and S. G. P. PLANT.
- "Higher aliphatic compounds. Part VII. The binary systems, palmitamide-stearamide, palmitanilide-stearanilide, and methyl palmitate-methyl stearate. Purification of palmitic and stearic acids." By J. B. GUY and J. C. SMITH.
- "A new reaction for the detection of *meta*-orientation in diamino-, dinitro-, and aminonitro-compounds." By A. ALBERT.
- "The retardation of chemical reactions. Part X. The stabilisation of perchloroethylene for medicinal purposes." By K. C. BAILEY.
- "The heat of adsorption of gases on the oxides of manganese at low pressures and room temperatures." By W. E. GARNER and T. WARD.
- "Structure of the chromium lakes of dyes. Part I. Lakes of *oo'*-dihydroxy- and *o*-hydroxy-carboxy-azo-compounds, including monosulphonic acids. The behaviour of azo-salicylic acids with chromic salts." By H. D. K. DREW and R. E. FAIRBAIRN.
- "Chemiluminescent organic compounds. Part VII. Some substituted phthalaz-1:4-diones: effect of substituents on the luminescent power." By H. D. K. DREW and R. F. GARWOOD.
- "The kinetics of the decomposition of acetaldehyde-ammonia in aqueous acidic solution; and some notes on the aldines." By D. T. LEWIS.
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ADDITIONS TO THE LIBRARY

I. Donations.

BRITISH PLASTICS YEAR BOOK 1939. The handbook and guide to the plastics industry. London 1939. pp. 584. ill. (*Reference.*) 15s. net. From the Publishers: Plastics Press.

CUMMING, ALEX. CHARLES, and KAY, SYDNEY ALEXANDER. A text-book of quantitative chemical analysis. 7th edition, revised by FRANCIS CLINT GUTHRIE and JOHN TRENGOVE NANCE. London 1939. pp. xvi + 496. ill. 15s. net. (*Recd.* 21/2/39.) From the Publishers: Messrs. Gurney & Jackson.

MACINNES, DUNCAN A. The principles of electrochemistry. New York 1939. pp. 478. ill. 30s. net. (*Recd.* 6/3/39.) From the British Empire Agents: Messrs. Chapman & Hall.

REDGROVE, H. STANLEY, and FOAN, GILBERT A. Hair-dyes and hair-dyeing: chemistry and technique. [3rd edition.] By H. S. REDGROVE and J. BARI-WOOLLSS. London 1939. pp. xiv + 214. ill. 10s. 6d. net. (*Recd.* 10/3/39.)

From Mr. H. Stanley Redgrove.

WRIGHT, C. HAROLD. Soil analysis: a handbook of physical and chemical methods. 2nd edition. London 1939. pp. x + 276. ill. 12s. 6d. net. (*Recd.* 28/2/39.)

From the Author.

II. By Purchase.

BERG, RICHARD. Die analytische Verwendung von o-Oxychinolin ("Oxin") und seiner Derivate. 2nd edition. (Die chemische Analyse. Vol. XXXIV.) Stuttgart 1938. pp. xii + 114. ill. (*Reference.*) M. 12.40.

CARPENTER, SIR HAROLD, and ROBERTSON, J. M. Metals. 2 vols. London 1939. pp. xxii + 824, xii, 825 to 1485. ill. 105s. net. (*Recd.* 21/2/39.)

DEUTSCHE ATLANTISCHE EXPEDITION. (Meteor) 1925—27. Wissenschaftliche Ergebnisse. Vol. IX. Die Verteilung des Sauerstoffs und Phosphats im Atlantischen Ozean. Part 1. By HERMANN WATTENBERG. Berlin 1938. pp. 132. ill. M. 19.80. (*Recd.* 28/2/39.)

DIEBNER, KURT, and GRASSMANN, EBERHARD. Künstliche Radioaktivität. Experimentelle Ergebnisse. Leipzig 1939. pp. xii + 87. (*Reference.*) M. 12.

DROSSBACH, PAUL. Elektrochemie geschmolzener Salze. Berlin 1938. pp. vi + 144. ill. M. 12. (*Recd.* 9/3/39.)

FORTSCHRITTE DER BIOCHEMIE. Part III. By FELIX HAUROWITZ. Dresden 1938. pp. xii + 167. M. 13. (*Recd.* 28/2/39.)

GLAFEY, HUGO, KRÜGER, D., and ULRICH, GUSTAV. Technologie der Wolle. Chemische

Technologie und mechanische Hilfsmittel für die Veredlung der Wolle. Berlin 1938. pp. x + 433. ill. M. 48. (*Recd.* 9/3/39.)

HÄGGLUND, ERIK. Holzchemie. 2nd edition. Leipzig 1939. pp. 397. ill. M. 27.80. (*Recd.* 28/2/39.)

HOFMANN, KARL ANDREAS, and HOFMANN, ULRICH R. Anorganische Chemie. 8th edition. Braunschweig 1939. pp. xvi + 796. ill. M. 22. (*Recd.* 9/3/39.)

INSTITUTE OF PETROLEUM. Oil shale and cannel coal. Proceedings of a Conference held in Scotland, June 1938. London 1938. pp. xx + 476. ill. 30s. net. (*Recd.* 21/2/39.)

KAUSCH, OSKAR. Handbuch der künstlichen plastischen Massen. 2nd edition. München 1939. pp. 584. M. 30. (*Recd.* 28/2/39.)

KOLKE, FRITZ. Chlorkautschukanstrichmittel. Berlin 1938. pp. 107. ill. M. 3.80. (*Recd.* 9/3/39.)

LEHMANN, KARL BERNHARD, and FLURY, FERDINAND. [Editors.] Toxikologie und Hygiene der technischen Lösungsmittel. Berlin 1938. pp. x + 295. ill. M. 29.40. (*Recd.* 9/3/39.)

MASSEY, H. S. W. Negative ions. Cambridge 1938. pp. xix + 105. ill. 6s. net. (*Recd.* 21/2/39.)

MICHEEL, FRITZ. Chemie der Zucker und Polysaccharide. Leipzig 1939. pp. xvi + 399. M. 28.40. (*Recd.* 28/2/39.)

MIKROCHIMICA ACTA. Organ für reine und angewandte Mikrochemie. Vols. I—III. Wien 1937—38. (*Reference.*) M. 108.

PLIMMER, R. H. A., and PLIMMER, VIOLET G. Food, health, vitamins. 8th edition. London 1938. pp. x + 233. ill. 5s. net. (*Recd.* 21/2/39.)

PRODINGER, WILHELM. Organische Fällungsmittel in der quantitativen Analyse. 2nd edition. (Die chemische Analyse. Vol. XXXVII.) Stuttgart 1939. pp. xvi + 204. (*Reference.*)

SCHMIDT, CARL L. A. [Editor.] The chemistry of the amino acids and proteins. Springfield, Ill. 1938. pp. xxiv + 1031. ill. \$7.50. (*Recd.* 21/2/39.)

SMITH, WOLFGANG, and RUTHARDT, K. Chemische Spektralanalyse. Eine Anleitung zur Erlernung und Ausführung von Spektralanalysen im chemischen Laboratorium. Berlin 1938. pp. viii + 103. ill. M. 7.50. (*Recd.* 9/3/39.)

STEPHENSON, MARJORY. Bacterial metabolism. 2nd edition. London 1939. pp. xiv + 391. ill. 21s. net. (*Recd.* 21/2/39.)

UNGEWITTER, CLAUS. [Editor.] Verwertung des Wertlosen. 2nd edition. Berlin 1938. pp. 304. M. 7.80. (*Recd.* 3/3/39.)

III. *Pamphlets.*

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Methods for the detection of toxic gases in industry. Leaflet No. 3. Sulphur dioxide. London 1938. pp. iv + 6. ill.

——— Leaflet No. 4. Benzene vapour. London 1939. pp. iv + 9. ill.

——— Leaflet No. 5. Nitrous fumes. London 1939. pp. iv + 9. ill.

INSTITUTION OF STRUCTURAL ENGINEERS. Report on air raid precautions. 2nd edition. London 1939. pp. 62. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Publications. No. 90. The electrolytic polishing of tin and its application to micrographic examination. By P. A. JACQUET. London 1939. pp. 12. ill.

UNION INTERNATIONALE DE CHIMIE. *Commission Internationale pour l'Étude des Matières Grasses*. Deuxième rapport. Méthodes unifiées pour l'analyse des matières grasses. 1938. Paris [1939]. pp. 36.

April 1939

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETINGS IN LONDON.

Thursday, May 4th, 1939, at 5 p.m. and not 5.30.

Joint Discussion with the **Physical Society** and the **Royal Meteorological Society** on "The Upper Atmosphere," to be held in the **Lecture Theatre of the Royal Institution, Albemarle Street, W. 1**, on Thursday, May 4th, 1939, at 5 p.m., by the courtesy of the Managers. To be opened by Professor F. A. Paneth, Ph.D., with a brief exposition of the ground to be covered by the Discussion, defining its limits. The following have agreed to take part, and at the end of their contributions the subject will be thrown open to general discussion:

The Upper Atmosphere.

A. Composition.

Professor F. A. Paneth, Ph.D. (Durham). Direct chemical investigations.
Professor S. Chapman, M.A., D.Sc., F.R.S. (London). Spectroscopic and other evidence as to chemical composition and dissociation.
Dr. G. M. B. Dobson, M.A., F.R.S. (Oxford). The vertical distribution of ozone.

B. Density and Temperature.

Dr. F. J. W. Whipple, M.A., F.Inst.P. (Kew). Direct measurements and Sound evidence.
Professor F. A. Lindemann, M.A., Ph.D., F.R.S. (Oxford). Meteor evidence.
Professor E. V. Appleton, M.A., D.Sc., F.R.S. (London). Radio evidence.

Tea will be served at the Royal Institution at 4.30 p.m.

Thursday, May 18th, 1939, at 6 p.m.

Seventh Liversidge Lecture, entitled "Some Considerations on the Nature of Catalysis," by Professor C. N. Hinshelwood, M.A., Sc.D., F.R.S., to be delivered in the Lecture Hall of the **Institution of Mechanical Engineers, Storey's Gate, S.W. 1**.

MEETINGS OUTSIDE LONDON.

NEWCASTLE AND DURHAM.

Monday, May 8th, 1939, at 6.45 p.m. **Bedson Lecture** on "Water Pollution," by Sir Robert Robertson, K.B.E., D.Sc., F.R.S., in the **Chemistry Lecture Theatre at King's College, Newcastle-on-Tyne**.

OXFORD.

Saturday, June 3rd, 1939, at 2.30 p.m. Joint meeting of the Chemical Society and the University of Oxford Alembic Club in the **large Lecture Room, Department of Biochemistry, The University Museum**. **Discussion** on "Free Radicals in Organic Reactions," to be opened by Professor C. N. Hinshelwood, M.A., Sc.D., F.R.S.

Lunch will be available in St. John's College (price about 3s.), and those desiring to attend the luncheon must inform Dr. H. W. Thompson, St. John's College, not later than Monday, May 29th. There will be an interval for tea, and the meeting will terminate at about 6.30 p.m. Fellows wishing to stay the night are recommended to apply to the Randolph or the Clarendon Hotel, in Oxford.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY.

Minutes of an
EXTRA MEETING

**held in the Lecture Theatre of the Royal Institution on Thursday, March 29th, 1939,
at 5 p.m.**

The PRESIDENT, Professor F. G. DONNAN, C.B.E., D.Sc., LL.D., F.R.S., was in the Chair.

After a brief introduction, the PRESIDENT called on Sir Henry Tizard, K.C.B., F.R.S., to deliver the Rutherford Memorial Lecture entitled "Lord Rutherford: His Life and Influence on Chemistry."

At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by Sir William Bragg, O.M., F.R.S., and seconded by Professor R. G. W. Norrish, F.R.S., was supported by the PRESIDENT and carried with acclamation. Sir Henry Tizard made brief acknowledgment.

ANNIVERSARY MEETINGS.

The Anniversary Meetings of the Society were held in London on March 29th, 30th, and 31st, 1939.

Wednesday, March 29th.

At 2.30 p.m. A meeting of Local Representatives was held, at which reports on the year's work and other matters concerning the activities of the Society outside London were considered.

At 5 p.m. The Rutherford Memorial Lecture by Sir Henry T. Tizard, K.C.B., F.R.S., was given in the Lecture Theatre of the Royal Institution.

From 8.45 until midnight Fellows and their guests, numbering some 370, were entertained by the Chairman and Directors of Imperial Chemical Industries, Ltd., at a Reception and Dance at Imperial Chemical House, being received by Lord and Lady McGowan and by Professor F. G. Donnan and Miss Donnan. There was dancing from 9 until midnight in the Refectory and a cabaret from 10 to 10.30. A running buffet was provided from 9 until midnight.

Thursday, March 30th.

Visits were arranged in the morning to the Bedford College for Women and also to the Wellcome Research Institution, where conducted parties were taken over the Museum of Medical Science and the Historical Medical Museum and the Chemical and Physiological Research Laboratories.

At 2.30 p.m. The business portion of the Annual General Meeting was held at Burlington House to receive the Report of Council and Accounts for 1938 and the result of the Election to Vacancies on the Council.

At 4 p.m. The Longstaff Medal and the Harrison Memorial Prize were presented and Professor F. G. DONNAN delivered his Presidential Address.

At 7 for 7.30 p.m. The Anniversary Dinner was held at Grosvenor House, Park Lane, W. 1, the President, Professor F. G. DONNAN, C.B.E., F.R.S., occupying the Chair. The Rt. Hon. Viscount Samuel was the principal guest of the evening, and there were present 261. After the Loyal Toasts had been honoured, the following toasts were proposed :

“ The Chemical Society.”

By the RIGHT HONOURABLE VISCOUNT SAMUEL, P.C., G.C.B., G.B.E.

Response : The President, Professor F. G. DONNAN, C.B.E., F.R.S.

“ The Guests.”

By SIR ROBERT ROBINSON, F.R.S., President-elect.

Responses : SIR ALBERT SEWARD, For.Sec.R.S., President of the British Association for the Advancement of Science, and Dr. C. G. DARWIN, M.C., F.R.S., Director of the National Physical Laboratory.

“ Kindred Societies.”

By Dr. H. J. T. ELLINGHAM.

Response : W. A. S. CALDER, Esq., President of the Institute of Chemistry.

At the conclusion of the Dinner, SIR ROBERT ROBINSON was inducted into the Chair as President, and the health of Professor Donnan was proposed by Sir Robert Robertson, K.B.E.

Friday, March 31st.

In the morning there were visits to The British Drug Houses, Ltd., by invitation of the Chairman and Directors, who entertained Fellows and their guests to luncheon at the Euston Hotel, and also to the Central Laboratories of the Shell Marketing Co., Ltd., at Fulham, those taking part in this visit being entertained to luncheon at the Lensbury Club at Teddington. In the afternoon visits were made to the Research and Development Department of the Distillers Company at Great Burgh, Epsom, and to the Laboratories of the Research Association of British Paint, Colour, and Varnish Manufacturers at Teddington. Those taking part in these visits were entertained to tea.

**Minutes of a
SCIENTIFIC MEETING**

held at Burlington House, London, W. 1, on Thursday, April 20th, 1939, at 8 p.m.

Professor N. V. SIDGWICK, C.B.E., D.Sc., LL.D., F.R.S., Past-President, was in the Chair, and welcomed the visitors present.

The minutes of the Scientific Meeting of March 16th, of the Rutherford Memorial Lecture of March 30th and of the Annual General Meeting of March 31st were taken as read, and were confirmed and signed.

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

	Elected.	Died.
Sir William Waters Butler, Bt.....	1890.	April 5th, 1939.
William A. Davis.....	1897.	March 14th, 1939.
Thomas C. Davison	1900.	June 15th, 1938.
Conrad Gerland	1889.	
David Ll. Howard	1887.	February 8th, 1939.
Albert T. King	1907.	March 21st, 1939.
Thomas E. Lescher	1929.	April 24th, 1938.
Harold T. G. van der Linde	1901.	July 23rd, 1937.
Latimer A. Rumble	1920.	May 25th, 1938.
Alexander Scott Russell	1921.	April 7th, 1939.
Henry Somerville	1898.	

FORMAL ADMISSION OF FELLOWS.

Messrs. L. Holliday and T. S. Subramanian were formally admitted Fellows of the Society.

The following papers were read :

- “The synthesis of di-tertiary arsines. *Meso*- and racemic forms of bis-4-covalent-arsenic compounds.” By J. CHATT and F. G. MANN.
- “Mechanism of hydrolysis of carboxylic esters and of esterification of carboxylic acids. Acid hydrolysis of an ester with heavy oxygen as isotopic indicator.” By S. C. DATTA, J. N. E. DAY, and C. K. INGOLD.
- “Ancillary mechanisms in the hydrolysis and esterification of carboxylic esters.” By E. D. HUGHES, C. K. INGOLD, and S. MASTERMAN.

NOTICES**BOARD OF TRADE.**

The Treasury have made an Order under Section 10 (5) of the Finance Act, 1926, exempting Dimethylamine and Trimethylamine from Key Industry Duty from April 19th, 1939, until December 31st, 1939.

Copies of the Treasury Order, which is entitled The Safeguarding of the Industries (Exemption) No. 2 Order, 1939, may be obtained from H.M. Stationery Office.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objections to the election of any of these candidates should communicate with the Honorary Secretaries not later than Monday, May 15th, 1939. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

Bell, Arthur Ernest, B.Sc. Hons. (Dun.), M.Sc. (Lond.), A.I.C., British, 10, The Retreat Close, Kenton, Harrow. Senior Science Master at St. Marylebone Grammar School, N.W. 1.

Signed by : G. R. Clemo, R. D. Haworth, P. L. Robinson, Thos. A. Melrose.

***Ford, Gerald**, B.Sc. Hons. (Lond.), British, 8, Lansdowne Close, West Worthing. Technical Trainee at Messrs. Lever Bros. and Unilever Ltd.

Signed by : C. K. Ingold, E. H. Ingold, C. L. Wilson.

***Harley-Mason, John**, British, 1, Fiveways, King's End, Ruislip. Undergraduate at Cambridge University.

Signed by : O. H. Wansbrough-Jones, W. Cule Davies, J. Chatt.

***Hartley, George Anthony Rathbone**, B.Sc. Hons. (Leeds), British, Westbury House, Panorama Drive, Ilkley. Research Student in Inorganic Chemistry at Leeds University.

Signed by : Frederick Challenger, R. Whytlaw-Gray, William Wild.

Janser, Arthur, Austrian by birth—intends to apply for naturalisation, 28, Great Ormond Street, W.C. 1. Techn. Chem. at Technische Hochschule, Vienna, 1921-25, Phys. Chem. at Kaiser Wilhelm Institute, Berlin, 1925-26, and at Vienna University, 1926-28. Research Chemist at British Resin Products at Tonbridge, Kent (Messrs. Honeywill and Stein, Ltd.).

Signed by : Herbert L. Howard, Henry W. Keenan, L. A. Jordan.

MacCormac, Michael, B.Sc., Ph.D. (Lond.), A.R.C.S., D.I.C., British, Department of Fuel, The University, Leeds. Chemist employed by the Gas Light and Coke Co., and acting temporarily as Prof. Townend's personal research assistant.

Signed by : R. H. Sapiro, D. M. Newitt, H. J. Tress.

* Reduced Annual Subscription.

- ***Phillips, Reginald Francis**, B.A. and B.Sc. (Oxon.), British, 45, Hillfield Park, N.10. Lecturer in Chemistry at Northampton Polytechnic, E.C. 1.
Signed by : D. L. Chapman, J. R. I. Hepburn, H. M. Powell.
- Reichstein, Tadeus**, Dr.Ing., Swiss, Pharmaz. Anstalt der Universität, Totengässlein, 3, Basel. Professor at the University of Basel.
Signed by : Alex. R. Todd, F. S. Spring, G. N. Burkhardt.
- ***Rochford, Henry Douglas**, B.Sc. (Lond.), British, 45, Norfolk Square, W. 2. Research Student at University College, London.
Signed by : S. Sugden, E. G. N. Greaves, G. A. Elliott.
- ***Whytlaw-Gray, Philippa Mary**, B.Sc. Hons. (Leeds), British, 38, Moor Road, Headingley. Research Student.
Signed by : R. Whytlaw-Gray, James Colvin, William Wild.

UNDER SPECIAL PROVISIONS APPERTAINING TO FELLOWS RESIDENT ABROAD :

- ***Holmes, Bruce Morell**, M.Sc. (Melbourne), A.A.C.I., British, 75, Walpole Street, Kew, E. 4, Melbourne. Research Student.
Signed by : W. Davies, H. H. Hatt.
- Ivins, Eric Henry Leonard**, British, Tresco, Rawson Street, Neutral Bay, N.S.W. 12 years' practical experience Industrial Chemistry. 3 years' inorganic, 2 years' organic, Technical College, Perth. Technical advisor, Sydney Branch of Messrs. Alfred Lawrence & Co., Ltd., Manufacturing Chemists.
Signed by : H. G. A. Harding, Greatrex, J. Woods.
- ***Lambert, Arthur**, B.Sc. (Lond.), A.R.C.S., British, 24, Netherton Grove, Chelsea, S.W. 10. Research Student at Royal College of Science.
Signed by : Harold France, D. H. Hey, J. H. Gorvin.
- Little, Ernest**, M.S. (Rochester), A.M. and Ph.D. (Columbia), D.Sc. (Philadelphia) American, 1, Lincoln Avenue, Newark, N.J. Dean of College of Pharmacy and Professor of Chemistry at Rutgers University.
Signed by : Joseph Rosin, Eric T. Stiller.
- Swanson, Thomas Baikie**, M.Sc. (Adelaide), British, New England University College, Armidale, N.S.W. Lecturer in Charge of the Chemistry Department of New England University College.
Signed by : A. Killen Macbeth.
- Taylor, Walter Seeward**, M.Sc. Hons. (New Zealand), British, S.A. School of Mines, North Terrace, Adelaide. Research Chemist.
Signed by : A. Killen Macbeth, F. L. Winzor.
- Yeh, Tsung-Tao**, Chinese, 68, Lane 913, Avenue Foch, Shanghai. Formerly student in Chemistry Department of the University of Shanghai. Connected with Perfume Manufacture.
Signed by : C. K. Wu.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between March 16th and April 20th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "Fused carbon rings. Part XVI. The stereoisomerism of the perhydrophenanthrenes : preliminary investigations." By R. P. LINSTEAD and A. L. WALPOLE.
- "Fused carbon rings. Part XVII. The stereoisomerism of the perhydrodiphenic acids and an examination of the Blanc rule." By R. P. LINSTEAD and A. L. WALPOLE.
- "Absorption spectra of some naturally occurring naphthaquinones and their derivatives." By R. G. COOKE, A. K. MACBETH, and F. L. WINZOR.

- "Benzanthrones. Part II. The synthesis of 3'-alkylmesobenzanthrones. Further observations on the mechanism of Bally's reaction." By F. G. BADDAR and F. L. WARREN.
- "Benzanthrones. Part III. The synthesis of 2'-alkyl- and 2'-aryl-mesobenzanthrones. The migration from the 3'- to the 2'-position." By F. G. BADDAR and F. L. WARREN.
- "Decomposition reactions of the aromatic diazo-compounds. Part VI. Reactions of benzenediazonium chloride with metals." By W. A. WATERS.
- "The alkaloids of *Mitragyne speciosa*. Part I. Mitragynine." By H. R. ING and C. G. RAISON.
- "The constitution of yeast ribonucleic acid. Part II. Guanine-uridylic acid." By R. FALCONER, J. M. GULLAND, G. I. HOBDAV, and E. M. JACKSON.
- "Picrotoxin. Part III." By J. C. HARLAND and A. ROBERTSON.
- "Polyterpenoid compounds. Part I. Cornolic acid." By A. ROBERTSON and G. SOLIMAN.
- "The alkaloids of *Artabotrys suaveolens*." By G. BARGER (the late) and L. J. SARGENT.
- "The mechanism of the Hofmann reaction. Retention of optical activity during the reaction with (+)-hydrotropamide." By C. L. ARCUS and J. KENYON.
- "Synthesis of polycyclic compounds related to the sterols. Part VII. The cyclisation of γ -5-methoxynaphthylbutyric acid." By G. A. R. KON and H. R. SOPER.
- "Syntheses in the phenanthrene series. Part X. 8-Methoxy-1-methylphenanthrene." By J. LOCKETT and W. F. SHORT.
- "Palladous chloride as a dehydrogenating agent." By G. W. COOKE and J. M. GULLAND.
- "Complex formation between polynitro-compounds and aromatic hydrocarbons and bases. Part VIII. Interaction and colour in systems containing methyl 4 : 6 : 4' : 6'-tetranitrodiphenate and various hydrocarbons." By D. LL. HAMNICK and G. SIXSMITH.
- "Furano-compounds. Part IV. A synthesis of *allobergapten*." By R. T. FOSTER, W. N. HOWELL, and A. ROBERTSON.
- "Furano-compounds. Part V. The synthesis of tetrahydroeuparin and the structure of euparin." By B. KAMTHONG and A. ROBERTSON.
- "The heat of adsorption of gases on Cr₂O₃ at low pressures and room temperatures." By D. A. DOWDEN and W. E. GARNER.
- "Polysaccharides. Part XXXI. Constitution of wheat starch and horse-chestnut starch." By E. L. HIRST and G. T. YOUNG.
- "The rotatory dispersion and circular dichroism of santonide and *para*-santonide in the ultra-violet." By S. MITCHELL and K. SCHWARZWALD.
- "Sapogenins. Part IV. The sapogenin of *balanites aegyptiaca* Wall." By G. A. R. KON and W. T. WELLER.
- "The mechanism of addition to double bonds. Part X. Kinetics of cyclopentadiene." By H. KAUFMANN and A. WASSERMANN.
- "The mobility of groups in 3-chloro-4-nitro- and in 5-chloro-2-nitro-diphenylsulphones." By J. D. LOUDON.
- "The thermal decomposition of chloromercuric β -ethoxyethanesulphinat." By J. D. LOUDON and N. SHULMAN.
- "Relations between internuclear distance, force constant, and energy of dissociation for carbon to carbon linkages." By J. J. FOX and A. E. MARTIN.
- "Refractive indices and molecular refractivities of 3-methylcyclohexanone and pulegone." By (MISS) D. M. SIMPSON.
- "Steroids and related compounds. Part III. The constitution of Westphalen's diol." By V. A. PETROW.
- "The synthesis of growth-inhibitory polycyclic compounds. Part I." By G. M. BADGER and J. W. COOK.
- "The volatile oil glycosides of *Thesium virgatum*." By P. C. DE KOCK and W. S. RAPSON.
- "Constituents of the leaves of certain *Leucadendron* species. Part II. Degradation experiments with leucodrin." By W. S. RAPSON.
- " γ -Thiopyridone and derived substances." By H. KING and L. L. WARE.

- "The viscosities of chemically related liquids, and their dependence on molecular weight and molecular volume. Part II." By D. T. LEWIS and A. R. MORGAN.
- "The synthesis of 5 : 6-dihydroxyflavone and the structure of primetin." By W. BAKER.
- "Organic compounds of sulphur. Part XXVI. A new method for the preparation of tetra-arylethylene sulphides." By A. SCHÖNBERG and M. Z. BARAKAT.
- "Chalkones : reactivity of phenyl *p*-benzyloxystyryl ketones." By S. N. RAO and T. S. WHEELER.
- " γ -Substitution in the resorcinol nucleus. Part IV. Gattermann reaction on poly-hydroxyacetophenones." By H. A. SHAH and R. C. SHAH.
- "Miro resin. Part I. Ferruginol." By C. W. BRANDT and L. G. NEUBAUER.
- "Some preparations of 4'-cyanines." By F. M. HAMER.
- "The mercuration of thionaphthen." By F. CHALLENGER and S. A. MILLER.

ADDITIONS TO THE LIBRARY

I. Donations.

HENRY, THOMAS ANDERSON. The plant alkaloids. 3rd edition. London 1939. pp. viii + 689. 42s. net. (*Recd.* 21/3/39.)

From the Author.

OXFORD SCIENCE. Vol. I. Nos. 1 and 2. Oxford 1938-39. (*Reference.*) 2s. net.

From the Editor.

II. By Purchase.

CHEMIE-INGENIEUR, DER. Vol. III. Part 4. Hochdruckoperationen. Edited by A. EUCKEN. Leipzig 1939. pp. x + 267. ill. M. 28. (*Recd.* 17/3/39.)

RICHTER, VICTOR VON. The chemistry of the carbon compounds. Edited by RICHARD ANSCHÜTZ. [3rd English edition.] Vol. II. The alicyclic compounds and natural products. Translated from the 12th German edition and

revised by T. W. J. TAYLOR and A. F. MIL-
LIDGE. Amsterdam 1939. pp. xiv + 656. (*Reference.*) 66s. net.

VOGEL, HANS. Die Technik der Bierhefe-
Verwertung. (Sammlung, N.F. Heft 42.)
Stuttgart 1939. pp. 95. ill. (*Reference.*)
M. 6.90.

III. Pamphlets.

BRITISH STANDARDS INSTITUTION. British
Standard Specifications. No. 135-1939.
Benzoles. (Revised.) pp. 62. ill.

— — — No. 458-1939. Xyloles. (Re-
vised.) pp. 46. ill.

— — — No. 479-1939. Coal tar naph-
thas. (Revised.) pp. 51. ill.

— — — No. 805-1939. Toluoles. pp.
51. ill.

— — — No. 830-1939. Winchester
bottles. pp. 9. ill.

May 1939

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETING

MEETING OUTSIDE LONDON

OXFORD.

Saturday, June 3rd, 1939, at 2.30 p.m. Joint meeting of the Chemical Society and the University of Oxford Alembic Club. A Discussion on "Free Radicals in Organic Reactions," to be held in the Large Lecture Room, Department of Biochemistry, the University Museum, Oxford, will be opened by Professor C. N. Hinshelwood, M.A., Sc.D., F.R.S. There will be an interval for tea and the meeting will terminate at about 6.30 p.m.

Trains between London and Oxford.

Depart Paddington.

9.45 a.m.
10.15 a.m. (R)
11.15 a.m.
(a) 12.30 p.m. (R)

Arrive Oxford.

11.7 a.m.
11.20 a.m.
12.38 p.m.
2.2 p.m.

Depart Oxford.

6.44 p.m. (R)
7.53 p.m. (R)
(b) 8.32 p.m.
9.34 p.m.

Arrive Paddington.

8.45 p.m.
9.20 p.m.
10.25 p.m.
10.55 p.m.

(a) Change at Reading.

(b) Change at Didcot and Reading.

(R) Restaurant Car.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Minutes of a JOINT MEETING

of the Physical Society, the Royal Meteorological Society, and the Chemical Society held in the Lecture Theatre of the Royal Institution, Albemarle Street, London, W. 1, on Thursday, May 4th, 1939, at 5 p.m.

SIR ROBERT ROBINSON, M.A., D.Sc., LL.D., F.R.S., was in the Chair.

Professor F. A. Paneth opened the discussion on "The Upper Atmosphere" by giving a brief exposition of the ground to be covered and then dealt with Direct chemical investigations. The Chair was then taken by Professor ALLAN FERGUSON, and the discussion was continued by Professor E. V. Appleton, who dealt with Radio evidence, by Professor S. Chapman speaking on the Spectroscopic and other evidence as to chemical composition and dissociation; by Dr. G. M. B. Dobson, on The vertical distribution of ozone; by Dr. F. J. W. Whipple, on Direct measurements and Sound evidence; and by Professor F. A. Lindemann on Meteor evidence. The meeting was then declared open for general discussion, in which Dr. D. F. Martyn and Mr. J. A. Ratcliffe took part.

At the conclusion of the discussion, the CHAIRMAN expressed the thanks of the meeting to those taking part and to the Managers of the Royal Institution for granting the use of the Lecture Theatre. The meeting was then declared closed.

Minutes of a SCIENTIFIC MEETING

held in the Meeting Hall of the Institution of Mechanical Engineers on Thursday, May 18th, 1939, at 6 p.m.

The President, SIR ROBERT ROBINSON, M.A., D.Sc., LL.D., F.R.S., was in the Chair.

After referring to the foundation of the Liversidge Lectureship, the PRESIDENT called on Professor C. N. Hinshelwood to deliver the Seventh Liversidge Lecture entitled "Some considerations on the Nature of Catalysis."

At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by Professor F. G. Donnan, and seconded by Professor W. Wardlaw, was carried with acclamation, Professor Hinshelwood making acknowledgment.

MEETING OUTSIDE LONDON

LECTURE AT NEWCASTLE-ON-TYNE.

The 46th Bedson Lecture entitled "Water Pollution," to which Fellows of the Society were invited, was delivered by Sir Robert Robertson, K.B.E., F.R.S., in the Chemistry Lecture Theatre of King's College, Newcastle-on-Tyne, on Monday, May 8th, 1939, at 6.45 p.m.

The lecture was followed by the 13th Annual Dinner of the Bedson Club, held in the University Union.

A fuller report of the meeting was published in "Chemistry and Industry" for May 20th, 1939.

OFFICIAL ANNOUNCEMENTS

PROCEEDINGS OF COUNCIL.

The Council have decided to discontinue the publication of summaries of proceedings of Council in the form in which they have appeared during the past year. In future, the *Proceedings* will contain a section entitled "Official Announcements," in which will be reported the main activities of the Council likely to be of interest to Fellows, and other matters concerning the work of the Society. Announcements made at Scientific Meetings will be included in this section, and not in the Minutes of Meetings as hitherto.

DEATHS.

The Council regret to announce the loss sustained by the Society, through death, of the following Fellows :

	Elected.	Died.
Julian Bruce-Kingsmill	1901.	February 9th, 1938.
Herbert John George	1924.	April 19th, 1939.
Henry Francis E. Hulton	1918.	April 26th, 1939.
Alexander MacGillivray Neilson	1898.	April 22nd, 1939.
George Arthur Pingstone	1889.	January 9th, 1939.
Sydney Williamson	1886.	April 28th, 1939.

CONGRATULATIONS.

The President has conveyed the congratulations of the Council to

- (a) Col. J. E. T. Barbary, who has been made a Commander of the Order of the British Empire (Military Division);
- (b) Mr. William Stone and Mr. Charles Slater, who completed 60 years of Fellowship on April 17th;
- (c) Sir Thomas H. Easterfield, Mr. J. T. Freestone, Mr. Herbert Ingle, Mr. J. Bruce Miller and Professor Arthur A. Read, who completed 50 years of Fellowship on April 4th; and to Mr. Charles J. Grist, who completed 50 years of Fellowship on May 16th.

The Council have received with great pleasure, through Professor N. V. Sidgwick, the good wishes to the Society from Mr. J. A. Pond, of Auckland, New Zealand, who is now 93 years of age, and have conveyed their cordial thanks and greetings to him through the President.

COMMITTEES.

The Council have expressed their high appreciation of the services rendered by Professor T. S. Moore as Chairman of the Publication Committee from 1934 to 1939, and have conveyed their thanks to him. The Council have also conveyed thanks to the retiring members of Committees.

The following Committees have been appointed for 1939-1940 :

Finance and General Purposes Committee.

W. A. S. Calder, F. H. Carr, H. J. T. Ellingham, C. S. Gibson, I. M. Heilbron, C. K. Ingold, Sir Gilbert T. Morgan, J. C. Philip, together with the Officers, the Chairman of the Publication Committee and the representative of the Joint Library Committee on the Council of the Chemical Society. The President as Chairman, Treasurer as Vice-Chairman, and the General Secretary as Secretary.

Publication Committee.

S. Sugden as Chairman, W. Baker, F. P. Bowden, H. V. A. Briscoe, F. Challenger, G. R. Clemo, W. E. Garner, C. F. Goodeve, J. M. Gulland, D. Ll. Hammick, G. S. Hartley, I. M. Heilbron, T. P. Hilditch, C. N. Hinshelwood, E. L. Hirst, E. D. Hughes, H. King, G. A. R. Kon, W. H. Mills, Sir Gilbert T. Morgan, R. A. Morton, R. G. W. Norrish, J. R. Partington, J. M. Robertson, R. Robison, N. V. Sidgwick, and H. Terrey, together with the Officers, and the Editor as Secretary.

Research Fund Committee.

W. E. Garner, W. N. Haworth, C. N. Hinshelwood, W. H. Mills, T. S. Moore, J. L. Simonsen, R. E. Slade, S. Smiles, S. Sugden, and the Officers, with the President as Chairman and the General Secretary as Secretary.

Publications Exchange Committee.

O. L. Brady (*ex-officio*), A. C. G. Egerton, H. J. Emeléus, T. A. Henry, E. E. Turner, and the Officers, with Dr. O. L. Brady as Chairman and the Librarian as Secretary.

LOCAL REPRESENTATIVES.

- (a) The Council have received with much regret the resignations of the following Fellows from the office of Local Representative :

Professor R. G. W. Norrish (Cambridge) ;
 Dr. E. H. Rodd (Manchester) ;
 Dr. B. D. Shaw (Nottingham) ;
 Dr. J. L. A. Macdonald (St. Andrews and Dundee).

and have appointed the following in their respective places :

Dr. F. B. Kipping ;
 Dr. R. Fraser Thomson ;
 Mr. J. C. Roberts ;
 Dr. J. D. M. Ross.

- (b) The Council have decided to appoint a Local Representative for Eire and Northern Ireland, such appointment to alternate between Eire and Northern Ireland. Professor T. J. Nolan has been appointed to this office for the first three-year period.

- (c) The following Representatives have been re-appointed for a further period :

Mr. R. Craven (Aberdeen) ;
 Dr. E. B. Maxted (Bristol) ;
 Dr. A. B. Crawford (Glasgow) ;
 Professor J. E. Coates (South Wales).

MEMORIAL LECTURE.

Professor E. K. Rideal has accepted the invitation of the Council to give the Sørensen Memorial Lecture.

REPRESENTATION ON OTHER BODIES.

- (a) Professor F. G. Donnan will continue to represent the Society on the Chemical Council.
- (b) Professor G. M. Bennett and Dr. Paul Haas have been appointed to represent the Society on the Joint Library Committee in the places of Professor J. W. Cook and Mr. F. P. Dunn.
- (c) Professor C. R. Harington has been appointed to represent the Society on the Bureau of Chemical and Physiological Abstracts in the place of Mr. F. P. Dunn.

- (d) Dr. C. F. Goodeve represented the Society at a Conference on the Standardisation of Letter Symbols used for Mathematical Equations in certain branches of science and technology, held in London on May 5th.

LIBRARY.

Owing to special circumstances, the Library will this year be closed in the evenings from July 3rd, instead of July 16th.

From July 3rd to September 30th, the Library will therefore be open daily from 10 a.m. to 5 p.m., except during the fortnight, August 7th to 19th inclusive, when it will be entirely closed for revision and cleaning.

TILDEN LECTURE FUND.

Under the Will of the late Lady Tilden, the Society has received the following share of the estate :

	Value when Acquired.		
	£	s.	d.
£532 London Transport 5% B Stock	625	2	0
186 National Provincial Bank " B " Shares (£5 each, £1 paid)	678	18	0
£220 Metropolitan Water Board (Kent Water Works) 3% Deb. Stock...	188	2	0
Cash	342	8	6
	<hr/>		
	£1834	10	6

It has been decided that this bequest shall be placed in a separate fund to be called the "Tilden Lecture Fund," the income from which will be used to defray the expenses of giving and publishing the Tilden Lectures, which will deal with the progress of some branch of chemistry. One or two Tilden Lecturers will be appointed each year by the Council, preferably from among the younger Fellows and each Lecturer will receive an honorarium and travelling expenses and will deliver the lecture in two different centres.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Mr. T. McLachlan who has covenanted to contribute the sum of £2 a year for seven years to the Publications Fund; to Professor W. H. Lewis for a contribution to this Fund, and to Dr. M. Brent for presenting volumes of the Society's publications.

REPORT ON SYMBOLS.

The Royal Society has intimated that the Report of the Joint Committee on Symbols has been adopted by their Council, who have added certain addenda and corrigenda to this Report which have been accepted by the Council of the Chemical Society. A list of these will be circulated in the *Journal*. A Joint Standing Committee on Symbols and Abbreviations has been set up by the Royal Society with the aim of keeping such matters in review and providing authoritative advice which may from time to time be needed. The Council have appointed Dr. C. W. Davies and Dr. H. J. T. Ellingham to represent the Society on this Committee.

ANNIVERSARY MEETING.

The thanks of the Council have been conveyed to the following for the valuable services they have rendered to the Society in connection with the Anniversary Meeting held on March 29th-31st, 1939 :

- (a) Sir Henry Tizard, K.C.B., for giving the Rutherford Memorial Lecture;
- (b) The Chairman and Directors of Imperial Chemical Industries, Ltd., for the Reception at Imperial Chemical House;
- (c) The Principal, Professor J. F. Spencer, and Dr. E. E. Turner for arrangements in connection with the Visit to Bedford College for Women;
- (d) Dr. C. M. Wenyon and Dr. T. A. Henry for arrangements in connection with the Visit to the Wellcome Research Institution;

- (e) Mr. Charles A. Hill, Dr. F. H. Carr, and Mr. R. R. Bennett for arrangements in connection with the Visit to the British Drug Houses, Ltd., and for hospitality received;
- (f) Mr. J. Kewley and the Directors of the Shell Marketing Co., Ltd., for arrangements in connection with the Visit to the Shell Laboratories at Fulham and for hospitality received;
- (g) Dr. J. Vargas Eyre and the Directors of the Distillers Co. for arrangements in connection with the Visit to their Laboratories at Epsom, and for hospitality received;
- (h) Mr. S. K. Thornley and Dr. L. A. Jordan for arrangements in connection with the Visit to the Research Association of British Paint, Varnish, and Colour Manufacturers, and for hospitality received.

ADDRESS OF CONGRATULATION.

The following Address of Congratulation has been presented on behalf of the Society by Professor J. C. Drummond and Professor A. R. Todd, who were appointed to represent the Society at the 25th Anniversary Celebrations of the Société de Chimie Biologique held in Paris on May 25th and 26th :

THE CHEMICAL SOCIETY TO LA SOCIÉTÉ DE CHIMIE BIOLOGIQUE.

We, the President, Officers, Council, and Fellows of the Chemical Society, rejoice to learn that on the Twenty-fifth and Twenty-sixth of May, One Thousand, Nine Hundred, and Thirty-nine, the Société de Chimie Biologique will celebrate the Twenty-fifth Anniversary of its Foundation.

We welcome this opportunity of conveying our sincere congratulations to your distinguished Society on this memorable occasion, and of recording our high appreciation of the valuable services it has rendered to Science not only in France but throughout the world during the twenty-five years of its existence.

It is our earnest hope that the Société de Chimie Biologique may continue to flourish in ever increasing measure in the years to come.

(L.S.)

ROBERT ROBINSON, *President.*
F. P. DUNN, *Treasurer.*
J. W. COOK } *Honorary*
C. W. DAVIES } *Secretaries.*
G. M. BENNETT }

Signed and Sealed in Council this Eighteenth day of May, One Thousand Nine Hundred and Thirty-nine.

NATIONAL SERVICE—CENTRAL REGISTER.

At the request of the Ministry of Labour, the Council has circularised Fellows asking them to furnish particulars of their training and experience for use by the National Service Department of the Ministry of Labour in compiling a Central Register which will, in the event of war, be used for supplying, both in Government service and elsewhere, additional requirements for persons with scientific, technical, professional, and higher administrative qualifications.

FELLOWSHIP.

In April the resignations of 6 Fellows were accepted, 14 new Fellows were elected, and 2 candidates were reinstated as Fellows. In May the resignations of 3 Fellows were accepted, 17 new Fellows were elected, and 1 candidate was reinstated as a Fellow.

Fellows elected on April 27th, 1939.

Gilbert Henry Beaven.
 William Kenyon Birtwistle.
 André Chrétien.
 Beverly Cortis-Jones.
 Andrew Douglas Algernon Mclean Fountaine.
 Kathleen Mary Goddard.
 Amy Smeeton Leah.

William Hutton Lockwood.
 Frank Hamilton Mason.
 Thomas John Morrison.
 Ursula Marion Parkes.
 Edward Owen Powell.
 Arthur Ernest Wilder Smith.
 Alexander Frank Wells.

Fellows elected on May 18th, 1939.

Arthur Ernest Bell.
 Gerald Ford.
 John Harley-Mason.
 George Anthony Rathbone Hartley.
 Bruce Morell Holmes.
 Eric Henry Leonard Ivins.
 Arthur Janser.
 Arthur Lambert.
 Ernest Little.

Michael MacCormac.
 Reginald Francis Phillips.
 Tadeus Reichstein.
 Henry Douglas Rochford.
 Thomas Baikie Swanson.
 Walter Seeward Taylor.
 Philippa Mary Whytlaw-Gray.
 Tsung-Tao Yeh.

GENERAL ANNOUNCEMENTS**BOARD OF TRADE.**

The Treasury have made an order under Section 10 (5) of the Finance Act, 1926, exempting sodium diocetyl sulphosuccinate from Key Industry duty from May 17th, 1939, until December 31st, 1939.

Copies of the Treasury Order, which is entitled The Safeguarding of Industries (Exemption) No. 3 Order, 1939, may be obtained from H.M. Stationery Office.

Representation has been made to the Board of Trade regarding the exemption of Methylamine from the duty imposed by the Safeguarding of Industries Act, 1921. Communications should be addressed to the Principal Assistant Secretary, Board of Trade, Great George Street, London, S.W. 1, before June 5th, 1939.

BRITISH STANDARDS INSTITUTION.

Copies of Draft B.S. Specification No. CE(C) 1725 for Vegetable Parchment for the Wrapping of Dairy Products have been received from the British Standards Institution (28, Victoria Street, S.W. 1) for technical comment. These have been placed in the Library, and Fellows are invited to send comments to the Director of the Institution by September 23rd, 1939.

BRITISH BROADCASTING CORPORATION.

A letter has been received from the British Broadcasting Corporation drawing attention to the programme of topical science which is broadcast every fortnight under the title of "Science Review." This programme aims at providing first-hand information about current events in the world of science that are likely to be of interest to a relatively wide audience. Each programme is normally of eighteen minutes duration, and may deal with one or more subjects which are not selected until the end of the week preceding transmission. So far such programmes have varied from descriptions of results of recent scientific research to consideration of topical questions in the light of scientific thought and observations in natural history.

The B.B.C. will welcome suggestions as to subjects and speakers from Fellows of the Chemical Society. Such suggestions should be sent to the Director of Talks, Programmes Division, the British Broadcasting Corporation, Broadcasting House, W. 1.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH.

The Department of Scientific and Industrial Research announce that *Building Research Bulletin No. 13*, dealing with calcium sulphate plasters, has been withdrawn from sale in consequence of certain errors in the Appendix, in which proprietary plasters are grouped according to type. A new edition will be issued shortly.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objections to the election of any of these candidates should communicate with the Honorary Secretaries not later than Monday, June 12th, 1939. Such objections will be treated as confidential. The forms of applications are displayed in the Library.*)

***Adu, Amishadai Larson**, British West African, Queens' College, Cambridge. Student taking Part II Natural Science (Chemistry).

Signed by : F. B. Kipping, A. J. Berry, P. Maitland, B. C. Saunders.

***Argument, Cyril**, B.Sc. (Dun.), British, Claude House, Murton Colliery. Research Student in Chemistry at Bede College, Durham.

Signed by : W. A. Waters, G. H. Christie, C. W. Gibby.

Fawcett, Eric William Musther, B.A. and B.Sc. (Oxon.), British, The Cottage, Ashley Close, Walton-on-Thames. Research Chemist at Anglo-Iranian Oil Co., Ltd.

Signed by : Francis H. Carr, L. M. Clark, R. O. Gibson.

***Hampton, George Hughan**, British, Fairways, Prestbury, Cheshire. Student at Balliol College, Oxford, reading for an honours degree in Chemistry.

Signed by : Ronald P. Bell, F. E. King, T. J. Bligh.

Jansen, Alexander Bertus Arnold, British, Lincoln College, Oxford. Student at Oxford University.

Signed by : N. V. Sidgwick, E. G. J. Hartley, F. M. Brewer.

Moore, Eric Wilfred, B.Sc.Hons. (Birm.), British, Breedon, Thorne, nr. Doncaster. Second Master and Senior Science Master at The Grammar School, Thorne, and Lecturer in Chemistry at Doncaster Technical College.

Signed by : Frederick Challenger, J. W. Baker, W. A. Wightman.

***Nicholls, Ralph John**, B.Sc. (Lond.), A.R.C.S., British, 85, Dollis Park, N. 3. Research Student in Organic Chemistry at Royal College of Science, S.W. 7.

Signed by : B. J. Heywood, D. H. Hey, J. R. Nicholls.

Norris, Alfred, B.A. (Oxon.), British, 332, Kensington Street, Bradford. Research Chemist.

Signed by : Ronald P. Bell, L. E. Sutton, D. Ll. Hammick.

***Page, James Ernest**, B.Sc., Ph.D. (Lond.), A.I.C., British, 32, Morden Road, Newport, Mon. Organic Research Chemist at Glaxo Laboratories, Greenford, Middlesex.

Signed by : H. B. Watson, J. F. J. Dippy, D. P. Evans.

Pittman, Rupert William, B.Sc. (Lond.), British, 37, Ringslade Road, N. 22. Demonstrator in Science, The Training College, L.C.C. Shoreditch Technical Institute, N. 1.

Signed by : F. Barrow, George W. Ferguson, D. J. G. Ives.

Reich, Watroslav Slavko, French, Institut de Biologie physicochimique, 13 rue Pierre Curie, Paris V^e. Assistant in the Kaiser Wilhelm Institut für Faserstoffchemie 1927-1930, Assistant in the Institut de Biologie, Paris, 1930-1937, Chargé des recherches de la Caisse Nationale des Sciences since 1937.

Signed by : Robert Robison, Arthur Harden, Walter T. J. Morgan.

Scott, Thornton, M.Sc.Tech. (Manc.), British, 13, Victoria Avenue, Didsbury, Manchester, 20. Chemist and Director of Research to "Refiners, Ltd," Manchester.

Signed by : R. J. W. Reynolds, G. Baddeley, R. F. Garwood.

***Swan, George Albert**, B.Sc.Hons. (Dun.), British, 3, Ravensworth Crescent, Low Fell, Gateshead, 9. Chemistry Research Student at King's College, Newcastle-on-Tyne.

Signed by : Thos. A. Melrose, Eric Hoggarth, Richard Raper.

Wedgwood, William, Inter.B.Sc. (Lond.), British, 124, Park Road South, Newton-le-Willows. Chemist in the Gas and Water Departments of Newton-le-Willows Urban District Council.

Signed by : A. B. Coles, James Bridge, S. Ernest Melling.

West, Laurence Victor Sidney, British, 24, Lucerne Road, Thornton Heath, Surrey. 3½ years Assistant Works Chemist in a Metallurgical Laboratory. 20 years as assistant to qualified public analysts and analytical and consulting chemists.

Signed by : William Kitto, A. Farmbrough, C. G. Moor.

* Reduced Annual Subscription.

UNDER SPECIAL PROVISIONS APPLICABLE TO APPLICANTS RESIDENT ABROAD :

May, Richard, Dr. Ing. (Aix la Chapelle), German, 4, Devon Court, Links Road, W. 3.
Formerly Director of I.G. Farbenindustrie.

Signed by : Otto Oberlander, R. Lessing.

PAPERS RECEIVED

List of papers received between April 20th and May 18th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- " *cis*-Azo-compounds. Part II." By A. H. COOK and D. G. JONES.
- " The mode of formation of violanthrone and *isoviolanthrone* from *mesobenzanthrone* and its derivatives." By W. BRADLEY and G. V. JADHAV.
- " Studies in the diazotisation and nitrosation of amines. Part IV. A general interpretation of the reaction." By J. C. EARL and N. G. HILLS.
- " The pyrolysis of disilane and trisilane." By H. J. EMELÉUS and C. REID.
- " Pyrido-(1' : 2' : 1 : 2)-benzimidazoles and allied compounds (cyclic 1 : 3-diazalines). Part II." By SIR GILBERT MORGAN and (MISS) J. STEWART.
- " The question of intramolecular asymmetric induction." By A. MCKENZIE and A. D. WOOD.
- " Higher aliphatic compounds. Part VIII. Purification of oleic and elaidic acids. Binary systems from oleic, elaidic, palmitic, and stearic acids. The technique of low-temperature crystallisation." By J. C. SMITH.
- " An investigation of steric influences on the phenomenon of resonance. Part II." By C. E. INGHAM and G. C. HAMPSON.
- " Researches in the menthone series. Part XV. *l*-1-*trans*- Δ^4 -Menthen-3-ol." By D. MALCOLM and J. READ.
- " Researches in the thujone series. Part II. The catalytic hydrogenation of *d*-sabinol." By A. G. SHORT and J. READ.
- " The alleged geometrically isomeric *p*-homosalicylideneanilines and salicylidene-*p*-aminoethyl benzoates." By V. DE GAOUCK and R. J. W. LE FÈVRE.
- " *cis*-Azo-compounds. Part III. Absorption spectra." By A. H. COOK, D. G. JONES, and J. B. POLYA.
- " The nitrosation and nitration of 2- and 3-hydroxyfuran." By H. H. HODGSON and R. R. DAVIES.
- " The seed fats of *Salvadora oleoides* and *S. persica*." By B. G. GUNDE and T. P. HILDITCH.
- " Heterocyclic derivatives of *p*-aminobenzenesulphonamide and 4 : 4'-diaminodiphenylsulphone." By W. H. GRAY.
- " The triterpene resinols and related acids. Part VI." By C. W. PICARD, K. S. SHARPLES, and F. S. SPRING.
- " The influence of the route chosen for an asymmetric synthesis upon the configuration of the resulting enantiomorph." By S. M. PARTRIDGE.
- " The yellow colouring matter of *Dahlia variabilis*." By J. R. PRICE.
- " Researches on some heterocyclic systems. Part I. Synthesis of certain thiophens." By S. MITRA, N. K. CHAKRABARTY, and S. K. MITRA.
- " Note on the decompositions of certain diazoperbromides derived from azobenzene." By P. P. HOPF and R. J. W. LE FÈVRE.
- " The reaction between thiosemicarbazones and maleic anhydride." By J. M'LEAN and F. J. WILSON.
- " Reactive methylene groups and nitroso-compounds. Abnormal action of acids on 1 : 2 : 3-triketones." By A. SCHÖNBERG and R. C. AZZAM.
- " The configuration of heterocyclic compounds. Part X. The optical resolution of 10-phenylphenoxarsine-10-oxide-2-carboxylic acid." By (MISS) M. S. LESSLIE.

- "The determination of dipole moments in the vapour phase. Part I. A new apparatus." By L. G. GROVES. Part II. The moments of alkylbenzenes and alkylcyclohexanes." By J. W. BAKER and L. G. GROVES.
- "The polar effects of alkyl groups." By J. W. BAKER.
- "The constituents of natural phenolic resins. Part XV. The stereochemical relationship of lariciresinol and pinoresinol." By R. D. HAWORTH and D. WOODCOCK.
- "Acid catalysis in non-aqueous solvents. Part VII. The rearrangement of *N*-bromobenzanilide in chlorobenzene." By R. P. BELL and O. M. LIDWELL.
- "The electrical conductivity of uni-univalent salts in acetone." By J. F. J. DIPPY, H. O. JENKINS, and J. E. PAGE.
- "The preparation of some nuclear-substituted dimethylanilines." By D. P. EVANS and R. WILLIAMS.
- "The electronic structure of sulphur trioxide." By C. C. MOSS.

ADDITIONS TO THE LIBRARY

I. Donations.

BIOCHEMISCHE ZEITSCHRIFT. Vols. XII-XXXVI, LXV-CXII. Berlin 1908-20. [Wanting Vols. XXXI, LXXIV, LXXV, and LXXIX.] (*For circulation.*)

From Dr. Bruno Rewald.

BUTLER, J. A. V. The fundamentals of chemical thermodynamics. 3rd edition. Part I. Elementary theory and electrochemistry. London 1939. pp. xvi + 271. ill. 7s. 6d. net. (*Recd.* 24/4/39.)

From the Author.

CANDLER, A. C. [Editor.] Spectrographic analysis in Great Britain. London 1939. pp. 80. 7s. 6d. net. (*Recd.* 21/4/39.)

CONN, G. K. T. The wave nature of the electron. London 1938. pp. x + 78. ill. 3s. 6d. net. (*Recd.* 6/5/39.)

— The nature of the atom. London 1939. pp. x + 114. ill. 3s. 6d. net. (*Recd.* 6/5/39.)

From the Publishers: Messrs. Blackie & Son.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Tin and its uses: a quarterly review. No. 1, etc. London 1939 +. (*Reference.*) From the Council.

KINTTOF, W. Experiments in warfare chemistry: a book of experiments for protection against gas and air attacks. London 1939. pp. viii + 144. ill. (Two copies.) 7s. 6d.

From the Publishers: The Massie Publishing Co. TEXAS COMPANY, The. Physical constants of the principal hydrocarbons. 2nd edition. Compiled by M. P. DOSS. New York 1939. pp. x + 152. (*Reference.*)

From the Company.

II. By Purchase.

ARKEL, A. E. VAN. [Editor.] Reine Metalle. Herstellung, Eigenschaften, Ver-

wendung. Berlin 1939. pp. viii + 574. ill. M. 49.80. (*Recd.* 16/5/39.)

BRANDENBURGER, KURT. Processes and machinery in the plastics industry. Translated by H. I. LEWENZ. London 1938. pp. xii + 243. ill. 25s. net. (*Recd.* 27/4/39.)

CRABTREE, J. I., and MATTHEWS, G. E. Photographic chemicals and solutions. Boston, Mass. 1939. pp. viii + 360. ill. \$4. (*Recd.* 27/4/39.)

EVANS, R. C. An introduction to crystal chemistry. Cambridge 1939. pp. xii + 388. ill. 18s. net. (*Recd.* 27/4/39.)

GLOCKLER, G., and LIND, S. C. The electrochemistry of gases and other dielectrics. New York 1939. pp. xiv + 469. ill. \$6. (*Recd.* 27/4/39.)

HANDBUCH DER LEBENSMITTELCHEMIE. Edited by A. BÖMER [and others.] Vols. I, II, parts 1 and 2, III-VIII, part 1. Berlin 1933-39. M. 1051.70. (*Recd.* 16/5/39.)

HEMPEL, EDWARD H. The economics of chemical industries. New York 1939. pp. x + 259. \$3. (*Recd.* 27/4/39.)

MEDICAL RESEARCH COUNCIL. Alcohol: its action on the human organism. 3rd edition. London 1938. pp. xviii + 176. ill. 1s. net. (*Recd.* 1/5/39.)

MUENSCHER, WALTER CONRAD. Poisonous plants of the United States. New York 1939. pp. xviii + 266. ill. \$3.50. (*Recd.* 27/4/39.)

NATIONAL BENZOLE ASSOCIATION. Standard specifications for benzole and allied products. 2nd edition. London 1938. pp. x + [96]. ill. 7s. 6d. net. (*Recd.* 1/5/39.)

PHILIPP, CURT. [Editor.] Technisch verwendbare Emulsionen. 2nd edition. Vol. I. Berlin. 1938. pp. 587. M. 36. (*Recd.* 15/5/39.)

REMY, HEINRICH. Lehrbuch der anorganischen Chemie. 2nd edition. Vol. I. Leipzig 1939. pp. xxii + 806. ill. M. 26. (*Recd.* 16/5/39.)

ROBINSON, CLARK SHOVE, and GILLILAND, EDWIN RICHARD. The elements of fractional distillation. 3rd edition. New York 1939. pp. xii + 267. ill. \$3. (*Recd.* 27/4/39.)

ROLLEFSON, GERHARD K., and BURTON, MILTON. Photochemistry and the mechanism of chemical reactions. New York 1939. pp. xvi + 445. ill. \$5.75. (*Recd.* 27/4/39.)

SARTORI, MARIO. Chimica delle sostanze aggressive. 2nd edition. Milano 1939. pp. xii + 420. ill. I. 45. (*Recd.* 15/5/39.)

SCOTT, WILFRED W. Standard methods of chemical analysis. 5th edition. 2 vols. Edited by N. HOWELL FURMAN in collaboration with eminent specialists. [New York] 1939. pp. xxxiv + 1236 + 96, xxiv, 1301 to 2618, 97. ill. \$17. (*Recd.* 27/4/39.)

STEPHENSON, J. N. [Editor.] The manufacture of pulp and paper. 3rd edition. Vol. V. Papermaking machines; handmade papers; paper finishing; coated papers; paper testing; papermaking details. New York 1939. pp. xiv + [767]. ill. \$6.50. (*Recd.* 27/4/39.)

SUTERMEISTER, EDWIN, and BROWNE, FREDERICK L. Casein and its industrial applications. 2nd edition. (American Chemical Society Monograph Series.) New York 1939. pp. 433. ill. \$6.50. (*Recd.* 27/4/39.)

UNITED STATES STEEL CORPORATION. Sampling and analysis of carbon and alloy steels. New York 1938. pp. 356. ill. \$4.50. (*Recd.* 27/4/39.)

WAGNER, HANS. Die Körperfarben. 2nd edition. Stuttgart 1939. pp. xii + 688. ill. M. 35. (*Recd.* 15/5/39.)

WARK, IAN W. Principles of flotation. Melbourne 1938. pp. 346. ill. 21s. net. (*Recd.* 27/4/39.)

III. Pamphlets.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 836—1939. Whale oil. pp. 12. ill.

— — — No. 838—1939. Method of test for the toxicity of wood preservatives to fungi. pp. 17. ill.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 839—1939. Veterinary cod-liver oil. pp. 29.

— — — No. 844—1939. Methods for the testing of vegetable adhesives. pp. 15. ill.

CHRÉTIEN, ANDRÉ. Étude du système quaternaire, eau, nitrate de sodium, chlorure de sodium, sulfate de sodium. Paris 1929. pp. viii + 157. ill.

COELINGH, MARIA BOURGONJE. Optische onderzoekingen over het vloeistof-damp-evenwicht in kapillaire stelsels. Utrecht 1938. pp. viii + 81. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Food Investigation*. Special Report No. 47. Microbiology in the preservation of the hen's egg. By R. B. HAINES. London 1939. pp. iv + 65. ill.

— — — *Forest Products Research*. Special Report No. 4. Recent work on the moisture in wood in relation to strength and shrinkage. By W. W. BARKAS. London 1938. pp. ii + 35. ill.

— — — *Fuel Research*. Physical and chemical survey of the national coal resources. No. 47. The Northumberland and Durham Coalfield. Northumberland area: the Bensham seam. London 1939. pp. vi + 129. ill.

— — — *Road Research*. Technical Paper No. 6. The rigidity modulus of bitumens and bitumen-filler mixtures. By T. LONSDALE and J. S. WILSON. London 1939. pp. vi + 20. ill.

FRIELINK, JOHANNES GERARDUS. De reactie van Schroeter. Leiden 1939. pp. 148.

HAHN, VIKTOR. Synthèse et étude pharmacologique de nouvelles bases quinoléiniques a fonction éther-oxyde aminée. Paris 1938. pp. 67. ill.

INTERNATIONAL TIN RESEARCH AND DEVELOPMENT COUNCIL. Publications. No. 92. Electro-tinning. By S. BAIER. London 1939. pp. 16.

PERREU, JEAN. Contribution à l'étude des solutions salines. Paris 1936. pp. 156. ill.

STRICKLER, HERBERT. Synthèse et propriétés cardiotoniques du diéthylamino-éthoxy-2-diphényle et des dérivés voisins. Paris 1938. pp. 64. ill.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Minutes of a JOINT MEETING

of the Chemical Society and the University of Oxford Alembic Club held in the Large Lecture Room, Department of Biochemistry, The University Museum, Oxford, on Saturday, June 3rd, 1939, at 2.30 p.m.

SIR ROBERT ROBINSON, M.A., D.Sc., LL.D., F.R.S., was in the Chair.

Professor C. N. Hinshelwood and Dr. W. A. Waters opened the Discussion on "Free Radicals in Organic Reactions," and the following took part in the Discussion: Professor R. G. W. Norrish, Professor M. Polanyi, Dr. H. W. Thompson, Mr. D. Ll. Hammick, Mr. E. J. Bowen, Dr. T. G. Pearson, Dr. C. E. H. Bawn, Mr. R. P. Bell, Dr. W. J. Hickinbottom, Dr. A. W. Chapman, Dr. A. Wassermann, Professor R. P. Linstead, Mr. A. Ubbelohde, Dr. J. J. Fox, Dr. C. F. Goodeve, Mr. J. D. Lambert, and Professor N. V. Sidgwick.

Towards the end of the Discussion, Mr. J. D. Lambert occupied the Chair and referred to the pleasure the University of Oxford Alembic Club felt in receiving a visit from the Chemical Society. Thanks were expressed to those taking part in the Discussion and to Professor R. A. Peters and the University authorities for granting the use of the Lecture Theatre.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regret to announce the loss sustained by the Society, through death, of the following Fellows:

	Elected.	Died.
Wallace Hume Carothers	1935.	April 29th, 1937.
William Alfred Jenkin	1911.	May 31st, 1939.

CONGRATULATIONS.

The President has conveyed the congratulations of the Council to

- (a) Professor J. F. Thorpe on his receiving the honour of Knight Bachelor;
- (b) Professor J. W. Cook on his appointment to the Regius Chair of Chemistry in the University of Glasgow;
- (c) Professor R. P. Linstead on his appointment to a Chair of Chemistry at Harvard University, and on his being awarded the Hofmann Medal of the German Chemical Society.

LOCAL REPRESENTATIVE.

The Council have received with regret the resignation of Dr. A. E. Bradfield from the office of Local Representative for North Wales and have expressed their high appreciation of the services he has rendered to the Society. Dr. G. R. Ramage has been appointed to this office.

CENTENARY CELEBRATIONS.

Professor F. J. Wilson has been appointed to serve on the Centenary General Committee.

REPRESENTATION ON OTHER BODIES.

The Council have appointed Dr. C. F. Goodeve to represent the Society on the Standing Committee of the British Standards Institution dealing with the Standardisation of Letter Symbols used in equations in various branches of science and technology, in conjunction with the American Standards Association.

LIBRARY.

Owing to special circumstances, the Library will this year be closed in the evenings from July 3rd, instead of July 16th.

From July 3rd to September 30th, the Library will therefore be open daily from 10 a.m. to 5 p.m., except during the fortnight, August 7th to 19th inclusive, when it will be entirely closed for revision and cleaning.

TILDEN LECTURES.

Professor E. L. Hirst and Dr. L. E. Sutton have accepted the Council's invitation to give the Tilden Lectures during the Session 1939-1940.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Professor C. N. Hinshelwood for delivering the Seventh Liversidge Lecture on May 18th and for opening the Discussion on "Free Radicals in Organic Reactions" at Oxford on June 3rd, 1939; also to Mr. R. P. Bell for arranging the latter.

The thanks of the Council have been conveyed to Major R. B. Turbutt for sending a contribution to the Publications Fund for 1940, and to Mr. A. J. B. Cooper for presenting copies of the Society's publications.

ADDRESS OF CONGRATULATION.

The following address of congratulation will be presented on the occasion of the 200th Anniversary Celebrations of the Royal Swedish Academy of Sciences to be held at Stockholm from September 23rd to 25th, 1939. The Society will be represented by the President, Professor F. G. Donnan, Professor W. N. Haworth, and Professor N. V. Sidgwick.

THE CHEMICAL SOCIETY
TO
THE ROYAL SWEDISH ACADEMY OF SCIENCES.

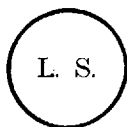
We, the President, Council and Fellows of The Chemical Society, learn with the greatest pleasure that The Royal Swedish Academy of Sciences will celebrate in September, 1939, the Two Hundredth Anniversary of its Foundation, and we offer our sincere congratulations on this auspicious occasion.

From the time of its foundation, the Royal Swedish Academy of Sciences has been a source of inspiration to the whole world: we recall the immortal names of Linnaeus, Celsius, Swedenborg, Bergman, and Scheele, and remember with pride that among the early Members of the Academy was Berzelius, whose influence on the science of Chemistry will never be forgotten.

In more recent years, the election of two distinguished Members of the Academy, Arrhenius and Svedberg, as Honorary Fellows of the Chemical Society, has been a token of our high appreciation of the signal services the Academy has rendered to the science of Chemistry. We recognise how fitting it is that the award of the Nobel Prize for Chemistry, founded by an illustrious son of Sweden, should be entrusted to the Academy.

We welcome this opportunity of joining with other Societies throughout the world in paying tribute to the services rendered to Science by The Royal Swedish Academy of Sciences during the two hundred years of its existence. It is our earnest hope that the Academy will continue to flourish and that in the future it may contribute in no less a

measure than in the past to the advancement of Knowledge for the benefit of all Mankind.



ROBERT ROBINSON, *President.*
 F. P. DUNN, *Treasurer.*
 J. W. COOK
 C. W. DAVIES } *Honorary*
 G. M. BENNETT } *Secretaries.*

Signed and Sealed in Council this Twenty-Second Day of June, One Thousand Nine Hundred and Thirty-nine.

LIST OF SYMBOLS.

The Council was informed in April that the Royal Society had accepted the Report of the Joint Committee of the Chemical Society, the Faraday Society, and the Physical Society on Symbols for Thermodynamical and Physico-chemical Quantities and Conventions relating to their use. The Royal Society invited the Chemical Society to consider the adoption of certain addenda and corrigenda to the Report; these have been adopted by the Council for use in the *Journal* and a list was circulated with the *Journal* for May in the form of a gummed slip for attachment to the original list contained in the Report issued in June, 1937.

RESEARCH FUND.

A Meeting of the Research Fund Committee will be held in November next. Applications for grants, to be made on forms obtainable from the General Secretary, must be received on or before **Wednesday, November 1st, 1939**. 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 **November 1st**.

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.

NATIONAL SERVICE—CENTRAL REGISTER.

Fellows who have filled up cards of registration for the Central Register were asked to state if they were already members of Territorial, Reserve or Auxiliary Forces, or under any other obligation for National Service. It is desired to keep the information on the register cards up to date, and Fellows who, since enrolling, undertake obligations **involving full-time service in time of war with H.M. Forces (Regular, Territorial, Reserve or Auxiliary), or with the Civil Defence Services**, are therefore requested to inform the General Secretary who will pass on the information to the Ministry of Labour.

It would be appreciated if Fellows would take similar action in respect of :

- (a) Change of home address.
- (b) Change of Employer.
- (c) Acquisition of additional professional qualifications.

FELLOWSHIP.

In June the resignations of 2 Fellows were accepted; the names of 15 Fellows were removed from the List of Fellows for non-payment of Annual Subscriptions under the action of Bye-Law 15, and 2 candidates were reinstated as Fellows.

The following 15 candidates were elected Fellows of the Society on June 15th, 1939 :

Amishadai Larson Adu.	Alfred Norris.
Cyril Argument.	James Ernest Page.
Eric William Musther Fawcett.	Rupert William Pittman.
George Hughan Hampton.	Watroslav Slavko Reich.
Alexander Bertus Arnold Jansen.	Thornton Scott.
Richard May.	George Albert Swan.
Eric Wilfred Moore.	William Wedgwood.
Ralph John Nicholls.	

GENERAL ANNOUNCEMENTS

SOCIETY OF CHEMICAL INDUSTRY.

The Annual Conference of the Society of Chemical Industry will be held at the University College of the South West of England from July 10th to 15th, 1939.

The main theme of the Conference will be "The Trend of Progress," and the subjects discussed will range from agricultural chemistry, including the latest discoveries of fungicides and insecticides, to oils and soap, cellulose, and cosmetics.

During the Meeting, the Society's Medal will be presented to Sir Gilbert T. Morgan, past-President.

Various visits will be arranged, and receptions include one by the civic authorities of Exeter and another by the Principal of University College.

The President of the Society, Mr. Victor Bartram, of Canada, will preside.

BOARD OF TRADE.

In exercise of their power under Section 5 (3) of the Finance Act, 1936, the Board of Trade have amended List H, issued in 1921 under Section 1 (5) of the Safeguarding of Industries Act, 1921, defining the chemicals to be taken as falling under the general description in the Schedule to that Act, by adding the words "of a purity not less than 95% excluding moisture" to the items Silver chloride and Silver sulphide. This amendment took effect as from May 30th, 1939.

PAPERS RECEIVED

List of papers received between May 18th and June 15th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "Steroids and related compounds. Part IV. The stereochemical configuration of the cholestane-3 : 5 : 6-triols." By B. ELLIS and V. A. PETROW.
- "A new method of resolving a racemic compound." By G. M. HENDERSON and H. G. RULE.
- "Co-ordination by methyl isonitrile; structure of β -tetramethyl ferrocyanide." By H. M. POWELL and G. B. STANGER.
- "*cis-trans*-Isomerism in octahedral groups." By H. M. POWELL.
- "Dipole moments and molecular structure of methyl and ethyl carbonates." By G. THOMSON.
- "Sapogenins. Part V. Basic acid." By B. J. HEYWOOD, G. A. R. KON, and L. L. WARE.
- "Chemical methods of concentrating radioactive halogens." By C. S. LU and S. SUGDEN.
- "The dissociation constants of the isomeric halogeno- and nitro-anilines and -phenols." By H. O. JENKINS.
- "The resolution of phenylmethylcarbinol." By E. DOWNER and J. KENYON.
- "The active principles of leguminous fish-poison plants. Part II. The isolation of *l*-elliptone from *Derris elliptica* (var. sarawak, creeping)." By S. H. HARPER.
- "Preparation of some *m*-dialkylaminobenzaldehydes." By W. COCKER and J. O. HARRIS.
- "Studies in electrolytic oxidation. Part XI. The electrolysis of acid-ester salts in non-aqueous solutions, and the mechanism of the Crum-Brown-Walker synthesis." By A. HICKLING and J. V. WESTWOOD.
- "The conversion of *d*-glucose into *d*-idose." By W. H. G. LAKE and S. PEAT.
- "Sapogenins. Part VI. Quillaic acid." By D. F. ELLIOTT and G. A. R. KON.
- "Normal and abnormal reactions of some sodium aromatic thiols with certain halogenonitronaphthalenes and certain halogenonitrobenzenes." By H. H. HODGSON and E. LEIGH.

- " Use of isotopes in chemical reactions. Part I. The mechanism of the Wagner–Meerwein rearrangement. Exchange of radioactive chlorine and of deuterium between camphene hydrochloride and hydrogen chloride." By T. P. NEVELL, E. DE SALAS, and C. L. WILSON.
- " Triterpene resinols and related acids. Part VII." By D. E. SEYMOUR, K. S. SHARPLES, and F. S. SPRING.
- " The synthesis of 2 : 3 : 7 : 8-dibenz-1 : 6-diazapyrene." By G. R. CLEMO and E. C. DAWSON.
- " Physicochemical aspects of bacterial growth. Part IV. Conditions determining stationary populations and growth rates of *Bact. lactis aërogenes* in synthetic media." By R. M. LODGE and C. N. HINSHELWOOD.
- " Physicochemical aspects of bacterial growth. Part V. Influence of magnesium on the lag phase in the growth of *Bact. lactis aërogenes* in synthetic media containing phosphate." By R. M. LODGE and C. N. HINSHELWOOD.
- " Radioactive sulphur for biochemical experiments." By J. L. TUCK.
- " The heat of decomposition of chlorine trioxide, and the energy of the oxygen-chlorine bond." By C. F. GOODEVE and A. E. L. MARSH.
- " The synthesis of phenanthrenes." By A. SCHÖNBERG and F. L. WARREN.
- " Smilagenone; a correction." By G. A. R. KON, H. R. SOPER, and A. M. WOOLMAN.
- " The kinetics of exchange reactions. Part I. *n*-Butyl bromide." By L. J. LE ROUX and S. SUGDEN.
- " An X-ray and thermal examination of the glycerides. Part VI. Symmetrical mixed triglycerides, CH(O-COR')(CH₂O-COR)₂, continued." By T. MALKIN and M. L. MEARA.
- " Absorption spectra of some sulphur compounds." By R. A. MORTON and A. L. STUBBS.
- " Photo-reaction. Part IV. Photo-reaction between phenanthraquinone and aromatic aldehydes. A new passage from phenanthraquinone to fluorenone." By A. SCHÖNBERG and R. MOUBACHER.
- " Rottlerin. Part III." By T. BACKHOUSE and A. ROBERTSON.
- " Picrotoxin. Part IV." By R. W. H. O'DONNELL, A. ROBERTSON, and (in part) J. C. HARLAND.
- " Syntheses of glycosides. Part XI. Cichorin." By F. S. H. HEAD and A. ROBERTSON.
- " Some amidines and amidoximes with trypanocidal activity." By I. D. LAMB and A. C. WHITE.
- " Epimeric alcohols of the cyclohexane series. Part II. 4-Methyl- and 4-isopropyl-cyclohexylcarbinols." By R. G. COOKE and A. K. MACBETH.
- " Acyl migration in a derivative of galactose." By J. S. D. BACON, D. J. BELL, and H. W. KOSTERLITZ.
- " Absorption spectra and structure of compounds containing chains of benzene nuclei." By A. E. GILLAM and D. H. HEY.
- " Studies in the terphenyl series. Part II. Hydroxy- and methyl-*p*-terphenyls." By H. FRANCE, I. M. HEILBRON, and D. H. HEY.
- " Studies in the terphenyl series. Part III. The preparation and nitration of *m*-terphenyl." By H. FRANCE, I. M. HEILBRON, and D. H. HEY.
- " Polyterpenoid compounds. Part I. Betulic acid from *Cornus florida*, L." By A. ROBERTSON, G. SOLIMAN, and (in part) E. C. OWEN.
- " The effect of poisons on the catalysed evolution of hydrogen from titanous salts." By E. B. MAXTED and H. C. EVANS.
- " Studies of the *ortho*-effect. The alkaline hydrolysis of ethyl anthranilate." By J. J. GORDON and H. B. WATSON.
- " The oxidation of aldehydes. Part I. The combustion zones of butaldehyde, isobutaldehyde, propaldehyde, acetaldehyde, glyoxal, and acraldehyde." By D. M. NEWITT, L. M. BAXT, and V. V. KELKAR.
- " The oxidation of aldehydes. Part II. The products of their combustion." By D. M. NEWITT and L. M. BAXT.
- " Aluminium chloride, a new reagent for the condensation of β -ketonic esters with phenols. Part IV. The condensation of 4-acyl-resorcinols with ethyl acetoacetate." By C. V. DELIWALA and N. M. SHAH.

ADDITIONS TO THE LIBRARY

I. *Donations.*

EECKE, CH. VAN. *Exploitation industrielle de la tourbe*. Paris 1918. pp. iv + 370. ill. *Fr.* 12.50. From Dr. S. Judd Lewis.

MENDELÉEFF, DMITRI IVANOVICH. *Literary remains*. Vol. I. Edited by E. C. FRITZMAN. Leningrad 1938. pp. ii + 132. ill. [In Russian.] (*Recd.* 18/5/39.) From the Editor.

MIDDLETON, H. *Systematic qualitative organic analysis*. London 1939. pp. viii + 279. ill. 8s. 6d. net. (*Recd.* 18/5/39.)

VIBART, ARMAND. *La tourbe*. Paris [1917]. pp. x + 223. *Fr.* 9. From Dr. S. Judd Lewis.

II. *By Purchase.*

BRANDT, KARL. *The German fat plan and its economic setting*. Stanford University 1938. pp. xiv + 344. ill. \$3. (*Recd.* 5/6/39.)

BURNS, R. M., and SCHUH, A. E. *Protective coatings for metals*. (American Chemical Society Monograph Series.) New York 1939. pp. 407. ill. \$6.50. (*Recd.* 15/6/39.)

CLARK, WALTER. *Photography by infrared, its principles and applications*. London 1939. pp. xii + 397. ill. 25s. net. (*Recd.* 15/6/39.)

EGLOFF, GUSTAV. *Physical constants of hydrocarbons*. Vol. I. Paraffins, olefins, acetylenes, and other aliphatic hydrocarbons. (American Chemical Society Monograph Series.) New York 1939. pp. 403. (*Reference.*) \$9.

INORGANIC SYNTHESSES. Vol. I. Editor-in-Chief, HAROLD SIMMONS BOOTH. New York 1939. pp. xiv + 197. ill. \$3. (*Recd.* 15/6/39.)

KENT-JONES, D. W. *Modern cereal chemistry*. 3rd edition. Liverpool 1939. pp. viii + 720. ill. 30s. net. (*Recd.* 15/6/39.)

MCCOLLUM, E. V., ORENT-KEILES, ELSA, and DAY, HARRY G. *The newer knowledge of nutrition*. 5th edition. New York 1939. pp. x + 701. ill. \$4.50. (*Recd.* 15/6/39.)

McKENNA, N. A. *Theoretical electrochemistry*. London 1939. pp. xiv + 469. ill. 15s. net. (*Recd.* 15/6/39.)

MUDD, J. S. *Leather finishes: their formulation, manufacture and application*. London 1939. pp. viii + 116. ill. 10s. 6d. net. (*Recd.* 15/6/39.)

NORTHROP, JOHN H. *Crystalline enzymes. The chemistry of pepsin, trypsin, and bacteriophage*. New York 1939. pp. xvi + 176. ill. \$3. (*Recd.* 15/6/39.)

PARRISH, P., and OGILVIE, A. *Calcium superphosphate and compound fertilisers: their chemistry and manufacture*. London 1939. pp. xiv + 322. ill. 35s. net. (*Recd.* 15/6/39.)

SHERWOOD, THOMAS K., and REED, CHARLES E. *Applied mathematics in chemical engineering*. New York 1939. pp. xii + 403. ill. \$4. (*Recd.* 15/6/39.)

III. *Pamphlets.*

BRITISH STANDARDS INSTITUTION. *British Standard Specifications*. No. 846—1939. *Burettes and bulb burettes*. London 1939. pp. 23. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *Fuel Research*. Physical and chemical survey of the national coal resources, No. 46. The Yorkshire, Nottinghamshire and Derbyshire coalfield. West Yorkshire area. The Barnsley-Warren House seam. London 1939. pp. vi + 74. ill.

GENERAL MEDICAL COUNCIL. *British Pharmacopœia Commission*. Reports of Committees. 11 and 12. Reports of the Committee on pharmaceutical chemistry (I) and (II). London 1939. pp. 29, 26. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. "Ludwig Mond, F.R.S.: 1839-1909," a lecture by F. G. DONNAN. London 1939. pp. 23.

SMITH, G. FREDERICK. *Cupferron and neocupferron: their preparation, properties and analytical applications*. Columbus 1938. pp. 47. ill.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

OFFICIAL ANNOUNCEMENTS

HONORARY SECRETARYSHIP.

The Council have accepted with great regret as from the 30th September the resignation of Professor J. W. Cook from the office of Honorary Secretary on his appointment to the Regius Chair of Chemistry at the University of Glasgow. They have expressed their high appreciation of the eminent services Professor Cook has rendered to the Society during the three years he has held this office.

Professor W. Wardlaw has been appointed by the Council to fill the vacancy until the next Annual General Meeting.

MEETINGS.

The programme of meetings for the session 1939-1940 cannot now be carried out, but it is hoped to arrange a modified programme of official meetings of the Society. Details of these and of meetings arranged by Local Representatives will be announced from time to time. It is considered unlikely that the first meeting in London will be held until after the end of October.

LIBRARY.

Until further notice the Library will be open each weekday from 10 a.m. to 1 p.m., and from 2 p.m. to 5 p.m. or sunset when earlier, except on Saturdays when the hours will be from 10 a.m. to 1 p.m.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objections to the election of any of these candidates should communicate with the Honorary Secretaries not later than Monday, October 16th, 1939. Such objections will be treated as confidential. The forms of applications are displayed in the Library.)

Basu, Kanti Bhusan, B.Sc. (Calcutta), B.Sc.Pharm. (Manc.), Ph.C., Indian, c/o T. Cook & Sons, Ltd., Berkeley Street, W. 1. Student.

Signed by : F. S. Spring, G. N. Burkhardt, Colin Campbell.

Belcher, Ronald, A.I.C., British, 17, Byron Road, Sheffield 7. Research Chemist, Safety in Mines Research Board.

Signed by : T. B. Smith, F. V. Tideswell, H. F. Coward.

Bell, William Alexander, B.Sc. (St. Andrews), British, Department of Chemistry, University College, Dundee. Research Scholar.

Signed by : W. F. K. Wynne-Jones, Robert Roger, John D. M. Ross.

***Bibby, Charles Leslie**, B.A.Hons., B.Sc. (Oxon.), British, The Pines, Vyner Road South, Birkenhead. With J. Bibby & Sons, Ltd.

Signed by : B. Lambert, T. P. Hilditch, Harold Jaspersen.

***Davis, Vivian Edwin**, M.Sc. (Wales), British, 55, Sunnybank Road, Griffithstown, Pontypool. Research Student at University College, Cardiff.

Signed by : W. J. Jones, David T. Lewis, W. Cule Davies.

***Eley, Daniel Douglas**, M.Sc., Ph.D. (Manc.), British, Colloid Science Department, Cambridge. Research Student.

Signed by : M. Polanyi, Eric K. Rideal, J. K. Roberts.

***Elliott, Joseph Henry**, M.P.S., British, 21, Victoria Avenue, Redcar. Student at Sunderland Technical College for Ph.C.

Signed by : W. S. Patterson, R. J. Winterton, J. H. Wilkinson.

* Reduced Annual Subscription.

- Evans, Miriam**, B.Sc.Hons. (Lond.), British, 60, Chatto Road, S.W. 11. Chemistry Mistress at the Burlington School, W. 12.
Signed by : Henry Terrey, H. J. Evans, O. L. Brady.
- Foster, Glyn William Arnold**, B.Sc. (Manc.), British, c/o British Aluminium Co., Ltd., Kinlochleven. Manager of Control and Research Laboratory of British Aluminium Co., Ltd.
Signed by : Freeman Horn, Richard Seligman, J. Davidson Pratt.
- *Gell, George Christopher Caesar**, B.A.Hons. (Cantab.), British, 15, Tudor Gardens, W. 3. Assistant Chemistry Master, Latymer Upper School.
Signed by : F. B. Kipping, A. J. Berry, J. E. Driver.
- Hardy, Charles Rupert**, B.Sc. (Birm.), British, 21, Spenser Crescent, Upminster. Chief Chemist to Pritchett & Gold and E.P.S. Co., Ltd., Dagenham Dock.
Signed by : Frederick Challenger, W. J. Hickinbottom, S. R. Carter.
- *Hemer, Ernest John**, British, 30, Brean Down Road, Peverell, Plymouth. Student at University College, Exeter.
Signed by : L. L. Bircumshaw, Wesley Cocker, D. G. Turner.
- *Hogarth, Ivor**, M.P.S., British, 203, Oxford Road, Middlesbrough. Student at Sunderland Technical College.
Signed by : W. S. Patterson, J. H. Wilkinson, R. J. Winterton.
- Jones, Samuel Tomlinson**, A.M.Inst.Gas E., British, 297, Blackburn Road, Oswaldtwistle. Gas Engineer and Manager, Oswaldtwistle U.D.C. Gas Department.
Signed by : Thos. Haworth, O. P. Cronshaw, R. O. Roberts.
- Linnch, Frank Stanley**, B.Sc.Hons. (Reading), British, Tullamaine, Bolton Avenue, Windsor. Student, chemistry of brewing.
Signed by : H. Bassett, D. Roy Maxted, Arthur K. Mills.
- Llewellyn, Rolfe**, B.Sc. (Wales), British, S. S. White Co. of Great Britain, Ltd., 126, Great Portland Street, W. 1. Works Chemist.
Signed by : W. J. Jones, N. M. Cullinane, S. T. Bowden.
- McNeil, Donald**, B.Sc. and Ph.D. (Glas.), British, c/o Dunne, 112, Dickenson Road, Rusholme, Manchester. Ramsay Research Fellow in the Organic Chemistry Department of Manchester University.
Signed by : F. S. Spring, Juan Madinaveitia, Alex R. Todd.
- *Marston, Hugh Charles**, B.A. (Oxon.), British, 219, Iffley Road, Oxford. Schoolmaster.
Signed by : Ronald P. Bell, B. Lambert, Harry Irving.
- *Nelson, Reginald**, B.Sc.Hons. (Dun.), British, 15, Newbold Street, Walker, Newcastle-on-Tyne. Research Student.
Signed by : G. R. Clemo, H. L. Riley, P. L. Robinson.
- Rajadhyaksha, Dattaram Sakharam**, B.Sc. (Bombay), M.Sc. (Louisiana, U.S.A.), British Indian, 22, Harvey Road, Gamdevi, Bombay 7. Consulting Sugar Technologist.
Signed by : N. J. Vazifdar, Khwaja A. Hamied, D. M. Karkhanavala.
- Robinson, Clifford Hanks**, B.A.Hons. (Toronto), F.C.I.C., Canadian, Central Experimental Farm, Ottawa, Ontario, Dominion Agricultural Chemist, Science Service, Dominion Department of Agriculture and Chief of Division of Chemistry, Science Service, Department of Agriculture.
Signed by : Alfred Tingle, Richard H. Manske, Leo Marion.
- *Rutter, Laurence Frederick**, B.Sc.Hons. (Lond.), British, 13, David Mews, W. 1. Analytical Chemist with J. Lyons & Co., Ltd.
Signed by : Leslie H. Lampitt, E. B. Hughes, J. O. Harris.
- Schulster, Jakob**, D.Sc.Tech. (Brünn, C.S.R.), Nat. British, 36, Warwick Grove, E. 5. Managing Director of Alliance Fur Dyers (1935), Ltd., E. 5.
Signed by : Arthur I. Vogel, O. Silberrad, S. P. Schotz.
- *Short, Andrew Galbraith**, B.Sc.Hons. and Ph.D. (St. Andrews), British, c/o Mrs. Morrison, 84, Argyle Road, Saltcoats. Chemist with I.C.I. (Explosives), Ltd., Ardeer.
Signed by : John Read, James Y. Macdonald, John Dewar.
- *Smith, Laurence Michael**, B.Sc. (Lond.), A.I.C., British, Jesus College, Oxford. Research Student.
Signed by : H. T. Openshaw, N. C. Brown, R. Robinson.

- Tuck, James Leslie**, M.Sc. (Manc.), British, The Clarendon Laboratory, Oxford. Salter's Fellow, Department of Experimental Philosophy, Clarendon Laboratory.
Signed by : Ronald P. Bell, C. Hurst, H. M. Powell, C. N. Hinshelwood.
- Varley, Harold**, M.Sc. (Manc.), A.I.C., British, 14, Fog Lane, Didsbury, Manchester, 20. Biochemist, Chemical Laboratory, Royal Infirmary, Manchester, and Assistant Lecturer in Chemical Pathology, The University, Manchester.
Signed by : E. C. Butterworth, Colin Campbell, J. B. M. Herbert.
- ***Whitaker, Walter Donald**, B.A.Hons. (Oxon.), British, 10, Glenalla Road, Llanelly. Research Chemist.
Signed by : S. G. P. Plant, J. C. Smith, W. Baker.

**UNDER SPECIAL PROVISIONS APPERTAINING TO APPLICANTS
 RESIDENT ABROAD :**

- Ahmad, Ghulam**, M.Sc.Hons. (Punjab), Islam (Indian), Government Inter. College, Pasrur, Sialkot, Punjab. Lecturer in Chemistry.
Signed by : W. H. F. Armstrong.
- Frankel, Ernest**, Dr.Ing. (Darmstadt), British (German origin), 141, Cranbourne Avenue, Benoni, Transvaal. Assistant Chemist in Chemical Laboratory of State Mines, Brakpan, Transvaal.
Signed by : Harold King, W. J. Elford.
- Hounsell, Walter Kingsford**, British, 11, Faulder Avenue, Westmere, Auckland, N.Z. Pharmaceutical Chemist and Manager for United Friendly Societies Dispensary, Auckland.
Signed by : Edwin A. Piper.
- Kemp, Woodrow Ernest**, British, Canadian National Railways, 890 Notre Dame Street, Montreal, Quebec. Research Chemist and Inspector, Sanitary Research Laboratory, Canadian National Railways.
Signed by : Lionel O. P. Walsh.
- Peel, Josias Samuel**, British, Public Hospital, Napier, N.Z. Pharmaceutical Chemist to the Public Hospital.
Signed by : Edwin A. Piper.
- Roy, Ajit Kumar**, B.Sc.Hons. (Allahabad), Indian, Central Excises and Salt (Northern India), Custom House, Calcutta. Superintendent, Central Excise and Salt.
Signed by : N. R. Dhar, K. P. Chatterjee.
- Ruddle, Leslie William**, A.N.Z.I.C., British, 124, Stapletons Road, Shirley, Christchurch N.E. 1, N.Z. Analytical and Industrial Chemist. Chief Chemist to A. F. Stevens, Ltd., of Christchurch.
Signed by : Edwin A. Piper.
- Taniguchi, Katsutarō**, Japanese, 525-2, Itamicho Itami Aza-Yukicho, Kawabe-gun, Hyogo-ken, Japan. Engineer to Takeda Pure Chemicals, Ltd., and Pharmacist.
Signed by : K. Miki.

* Reduced Annual Subscription.

ADDITIONS TO THE LIBRARY.

I. *Donations.*

- CHIBNALL, ALBERT CHARLES. Protein metabolism in the plant. New Haven 1939. pp. xvi + 306. ill. \$4. (*Recd.* 1/7/39.)
 From the Author.
- COWARD, H. F., and JONES, G. W. Limits of inflammability of gases and vapors. Revised edition. (U.S. Bureau of Mines, Bulletin 279.) Washington 1939. pp. x + 146. ill. 20c. (*Recd.* 25/7/39.) From Dr. H. F. Coward.
- IMPERIAL INSTITUTE. *Mineral Resources Department*. Reports on the mineral industry of the British Empire and foreign countries. Magnesium, magnesite, and dolomite. By J. LUMSDEN. London 1939. pp. 126. (*Reference.*) 2s. 6d. net. From the Director.
- INDIAN LAC RESEARCH INSTITUTE. Uses of lac. By H. K. SEN and S. RANGANATHAN. Namkum 1939. pp. 79. ill. Re. 1/4/-. (*Recd.* 25/7/39.) From the Director.
- PAULING, LINUS. The nature of the

chemical bond and the structure of molecules and crystals: an introduction to modern structural chemistry. Ithaca 1939. pp. xiv + 429. ill. 21s. net. (*Recd.* 10/8/39.)

From the London Publishers: Oxford University Press.

SCIENCE ET INDUSTRIE. No. 284 bis. La technique des industries chimiques. Edition 1939. [Supplement to *Mécanique*.] Paris 1939. pp. 188. ill. (*Reference*.) Fr. 45.

From the Publishers: Science et Industrie.

SOCIETÀ ITALIANA DI BIOCHIMICA. Biochimica e Terapia Sperimentale. Vol. XXVI, etc. Milano 1939 +. (*Reference*.)

From the Biochemical Society.

SUGAR COMMISSION. Sugar Abstracts: monthly bibliography and abstracts relating to the manufacture and refining of sugar. Vol. I, etc. London 1939 +. (*Reference*.)

From the Commission.

TAYLOR, F. SHERWOOD. General science for schools. (Part III.) London 1939. pp. xii + 271. ill. 3s. (*Recd.* 31/7/39.) From the Publishers: Messrs. William Heinemann.

THORPE, [SIR EDWARD]. Dictionary of applied chemistry. 4th edition. Vol. III. By SIR JOCELYN THORPE and M. A. WHITELEY, assisted by eminent contributors. London 1939. pp. xxiv + 608. ill. (*Reference*.) 63s. net.

From the Editors.

WEEKS, MARY ELVIRA. Discovery of the elements. 4th edition. Easton, Pa. 1939. pp. vi + 470. ill. \$3. (*Recd.* 28/8/39.) From the Publishers: Journal of Chemical Education.

II. By purchase.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. Recent advances in surface chemistry and chemical physics. Edited by FOREST RAY MOULTON. Lancaster, Pa. 1939. pp. 133. ill. \$2.50. (*Recd.* 17/5/39.)

BODENBENDER, H. G. Zellwolle. Kunstspinnfasern . . . ihre Herstellung, Verarbeitung, Verwendung und Wirtschaft. 3rd edition. Berlin-Steglitz 1939. pp. 810. ill. M. 18. (*Recd.* 3/7/39.)

BRENNECKE, ERNA. Schwefelwasserstoff als Reagens in der quantitativen Analyse. (Die chemische Analyse, Vol. XLI.) Stuttgart 1939. pp. xii + 234. ill. (*Reference*.)

DECHEMA MONOGRAPHIEN. Vol. X, etc. Berlin 1939 +. (*Reference*.)

FARKAS, A., and MELVILLE, H. W. Experimental methods in gas reactions. London 1939. pp. xvi + 389. ill. 30s. net. (*Recd.* 17/6/39.)

GREILING, WALTER. Chemie erobert die

Welt. Berlin 1938. pp. 394. ill. M. 7.50. (*Recd.* 12/7/39.)

HAND- UND JAHRBUCH DER CHEMISCHEN PHYSIK. Vol. III. Part 2, Section iii—iv. Die Boltzmannsche Statistik und ihre Modifikation durch die Quantentheorie. By A. SOMMERFELD and L. WALDMANN. Freie Weglänge und Transporterscheinungen in Gasen. By KARL F. HERZFELD. Leipzig 1939. pp. 286. ill. (*Recd.* 12/7/39.)

— Vol. X. Part 3. A. Starkeffekt. By B. MROWKA. B. Elektrischer Kerr-Effekt. (Elektrische Doppelbrechung.) By H. A. STUART. Leipzig 1939. pp. 110. ill. (*Recd.* 12/7/39.)

HERZBERG, GERHARD. Molekülspektren und Molekülstruktur. Vol. I. Zweiatomige Moleküle. Dresden 1939. pp. xvi + 404. ill. M. 30. (*Recd.* 3/7/39.)

INGENIÖRSVETENSKAPSAKADEMIEN and SVENSKA CEMENTFÖRENINGEN. Proceedings of the symposium on the chemistry of cements, Stockholm 1938. Stockholm 1939. pp. xvi + 578. ill. 30s. net. (*Recd.* 8/7/39.)

KAUSCH, OSKAR. Das chemische Feuerlöschwesen. Leipzig 1939. pp. xii + 283. ill. M. 18.50. (*Recd.* 27/6/39.)

MORRELL, R. S. The scientific aspects of artists' and decorators' materials. London 1939. pp. xii + 141. ill. 5s. net. (*Recd.* 17/6/39.)

ROLLEFSON, GERHARD K. The photochemistry of the halogens. Paris 1938. pp. 53 + ii. (*Recd.* 22/6/39.)

SMALL, LYNDON F. [and others]. Studies on drug addiction with special reference to chemical structure of opium derivatives and allied synthetic substances and their physiological action. (*U.S. Public Health Reports, Supplement No. 138*.) Washington 1938. pp. viii + 143. ill. 60c. (*Recd.* 21/8/39.)

SOCIÉTÉ DE CHIMIE INDUSTRIELLE and CENTRE DE PERFECTIONNEMENT TECHNIQUE. Journées de la lutte contre la corrosion. (*Chimie & Industrie, 1939, 41, Special No.*) pp. 526. ill. (*Reference*.) Fr. 150.

— — Journées des engrais. (*Chimie & Industrie, 1939, 41, Special No.*) pp. 131. Fr. 50.

VAN DYKE, H. B. The physiology and pharmacology of the pituitary body. Vol. II. Chicago 1939. pp. xiv + 402. ill. \$4.50. (*Recd.* 3/8/39.)

VEREIN DEUTSCHER INGENIEURE. Verfahrenstechnik. Schriftenfolge für Chemie-Ingenieure, Apparatebauer und verwandte Berufe. Folge 1936 etc., Berlin 1936 +. (*Reference*.)

October 1939

THE CHEMICAL SOCIETY

FORTHCOMING MEETINGS

As Fellows have already been informed, it is hoped to announce from time to time particulars of meetings to be held in and outside London.

The first meeting of the session in London will be held at Burlington House, on **Thursday, November 16th**, at 2.30 p.m., when Professor C. R. Harington, F.R.S., will deliver a lecture entitled "**Synthetic Immunochemistry.**"

NOTICES TO AUTHORS OF PAPERS

The attention of Fellows is drawn to the following resolutions passed by the Council to ensure that the *Journal* does not contain information likely to contravene the Official Secrets Act :

- (a) The author of every paper submitted to the Society shall be requested to send with the paper a signed form of declaration that to the best of his knowledge the paper does not contain any information that contravenes the Official Secrets Act.
- (b) An author engaged in any Government Department or similar body associated with the prosecution of the war shall be requested to submit with his paper a written declaration from such Department or body to the effect that he has received authority to submit the paper for consideration for publication in the *Journal*.

RESEARCH FUND

The Research Fund Committee will meet in December this year instead of in November as announced. Applications for grants can now be received by the General Secretary up to the 1st December, 1939.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

MEETING OUTSIDE LONDON

MEETING AT SWANSEA.

The first meeting of the Society in the South Wales Area for the session 1939-1940 took the form of a social gathering of local members of the Chemical Society, the Society of Chemical Industry, and the Institute of Chemistry. The meeting took place on the afternoon of Saturday, 21st October, 1939, at the Hotel Metropole, Swansea. Members and guests were received by Professor J. E. Coates, representing the Chemical Society, and Mr. J. Christie, Chairman of the Local Sections of the Institute of Chemistry and the Society of Chemical Industry. After tea Mr. Christie and Professor Coates welcomed the visiting members and indicated that every effort would be made to carry on the local activities of the societies during the present session. Sir Robert Robertson, K.B.E., F.R.S., replied on behalf of the guests. His offer to give a lecture at a local meeting of the Chemical Society was much appreciated.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regret to announce the death on the 17th October of Sir William Jackson Pope, K.B.E., F.R.S., who was elected a Fellow on the 19th February, 1891. The following resolution was passed at the Council Meeting on the 19th October :

“ The President, Officers and Council of the Chemical Society learn with profound sorrow of the death on the 17th October of Sir William Jackson Pope, who was elected a Fellow of the Society in 1891 and served on the Council for periods amounting to over 23 years in all, occupying the office of President from 1917 to 1919.

They remember with gratitude the active interest he ever took in the affairs of the Society, and record their high appreciation of the eminent services he has rendered to Chemistry not only by his outstanding researches in the field of stereochemistry, but also by his pioneer labours in the international organisation of our science. They realise that by his death the Science of Chemistry in this Country and throughout the World has suffered the irreparable loss of a unique personality.”

The Society was represented at the Memorial Service held in the Chapel of St. John's College, Cambridge, on the 28th October, at 2.30 p.m.

The Council also regret to announce the deaths of the following Fellows :

	Elected.	Died.
William Thomas Burgess	1884	June 22nd, 1939.
Reginald Craven	1920	July 28th, 1939.
(Local Representative for Aberdeen)		
William Risdon Criper	1878	January 13th, 1939.
Henry Carter Draper	1884	May 12th, 1939.
Moses William Jones	1891	December 13th, 1938.
Louis Charles Kemp	1919	May 17th, 1939.
Percival George Lloyd	1907	April 28th, 1939.
John William Pallister	1884	June 4th, 1939.
John Paterson	1918	June 18th, 1939.
Thomas John Roberts	1894	July 28th, 1939.
George James Robertson	1925	September 5th, 1939.
John Trotter	1918	March 4th, 1939.

HONORARY SECRETARYSHIP.

On the retirement of Professor J. W. Cook from the office of Honorary Secretary the Council passed the following resolution :

“ The Council greatly regret that owing to his appointment to the Regius Chair of Chemistry at the University of Glasgow, Professor J. W. Cook has resigned from the office of Honorary Secretary. They express their high appreciation of the valuable services he has rendered to the Society during the three years (1936 to 1939) that he has held this office and desire to convey their cordial thanks to him for his devotion to the welfare of the Society.”

Professor J. W. Cook has been appointed a co-opted member of Council until the next Annual General Meeting.

LOCAL REPRESENTATIVES.

Dr. T. Harold Reade has been invited to act as Local Representative for Aberdeen in place of the late Mr. R. Craven.

JOINT LIBRARY COMMITTEE.

The Council have appointed Professor W. Wardlaw to represent the Society on the Joint Library Committee in the place of Professor G. M. Bennett.

LIBRARY.

Fellows are reminded that until further notice the Library will be open each weekday from 10 a.m. to 1 p.m., and from 2 p.m. to 5 p.m. or sunset when earlier, except on Saturdays when the hours will be from 10 a.m. to 1 p.m.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to the Royal Society for a contribution of £600 from the Government Publications Grant for 1939; to the Chemical Council for a grant of £150 towards the cost of inserting summaries in the *Journal*, and to Mr. C. R. Beck, Mr. R. H. Cocks, and Mr. G. Kaufmann for presenting numbers of the Society's publications.

ROYAL SWEDISH ACADEMY OF SCIENCES.

A communication has been received from the Royal Swedish Academy of Sciences stating that owing to the present international situation it has been found appropriate to suspend the Bicentenary Celebrations which were to have been held from the 23rd to the 25th September, 1939, and conveying thanks for the Address of Congratulation sent by the Society.

REAL SOCIEDAD ESPAÑOLA DE FISICA Y QUIMICA.

The good wishes of the Council have been conveyed to the Real Sociedad Española de Fisica y Química on its resuming its scientific activities.

FELLOWSHIP.

The resignations of 24 Fellows have been accepted; the names of 40 Fellows have been removed from the List of Fellows; 36 new Fellows have been elected and 5 reinstated.

GENERAL ANNOUNCEMENTS
NATIONAL SERVICE CENTRAL REGISTER.

In a letter received recently from the Ministry of Labour it is stated that it has been found possible to fill vacancies with greater promptitude if the claims of suitably qualified persons, who are at the time unemployed, can be considered in the first instance, thus eliminating the time lag resulting from obtaining, and giving consideration to, the

observations of employers. It also enables the name of the unemployed person to be submitted direct to the Ordering Department or firm, without first ascertaining his willingness to consider the particular vacancy.

Fellows whose names are included on the Central Register are therefore asked to inform the Society of any change in their employment and in the availability of their services so that this information may be passed on to the Ministry of Labour.

Communications should be addressed to the General Secretary of the Society.

BRITISH STANDARDS INSTITUTION.

The following draft specifications have been received from the British Standards Institution for technical comment :

CF(CH)3899 for Test Sieves (BS 410) (November 9th, 1939).

CF(C)4092 Draft Methods for the Sampling of Vegetable Adhesives (January 23rd, 1940).

CF(C)3403 for a 9 ml. Automatic Pipette (January 27th, 1940).

These have been placed in the Library, and Fellows are invited to send comments to The Director of the Institution by the date indicated in each case.

PAPERS RECEIVED

List of papers received between June 15th and October 19th, 1939. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "The anomalous strength of *m*-butyric acid." By H. O. JENKINS and J. F. J. DIPPY.
- "Liquid phase reactions at high pressures. Part V. The polymerisation of *cyclopentadiene* and α -*cyclopentadiene*." By B. RAISTRICK, R. H. SAPIRO, and D. M. NEWITT.
- "Liquid phase reactions at high pressures. Part VI. The explosive decomposition of *cyclopentadiene*." By B. RAISTRICK, R. H. SAPIRO, and D. M. NEWITT.
- "Phthalic esters as alkylating agents." By H. KING and E. V. WRIGHT.
- "The hydrolysis of salts in aqueous solution." By H. F. BROWN and J. A. CRANSTON.
- "Improved methods for the *para*-nitrosation and *para*-oximation of the *meta*-halogeno- (excluding *m*-fluoro-)phenols." By H. H. HODGSON and D. E. NICHOLSON.
- "Sulphonates of higher alkyl phenolic ethers." By G. S. HARTLEY.
- "Hydrolysis and alcoholysis of resorcinyll ether sulphonic acids." By G. S. HARTLEY.
- "The cyclic methyleneimines. Hydrolysis of quaternary compounds. Preparation of aliphatic secondary amines. Part II." By R. BLUNDELL and J. GRAYMORE.
- "Polysaccharides. Part XXXII. The constitution of levans formed by bacterial action." By R. R. LYNE, S. PEAT, and M. STACEY.
- "Studies in water-in-oil emulsions. Part III. The effect of the relative phase volumes on the type of emulsions stabilised by magnesium oleate." By R. C. PINK.
- "The crystal structure of potassium sulphamate." By C. J. BROWN and E. G. COX.
- "Phthalocyanines and related substances. Part XV. Tetrabenz-triazaporphin; its preparation from phthalonitrile and a proof of its structure." By P. A. BARRETT, R. P. LINSTAD, and G. A. P. TUEY.
- "Phthalocyanines and related compounds. Part XVI. The halogenation of phthalocyanines." By P. A. BARRETT, R. P. LINSTAD, E. F. BRADEROOK, and C. E. DENT.
- "The triterpene group. Part VI. The oxidation of β -amyrin benzoate. A new route to the thio-compound, C₃₀H₄₄OS." By J. C. E. SIMPSON.

- "The evaporation of water through monomolecular films." By F. SEBBA and H. V. A. BRISCOE.
- "The interchange of heavy oxygen between water and inorganic oxy-anions." By E. R. S. WINTER, M. CARLTON, and H. V. A. BRISCOE.
- "The *d*- and *l*- α -phenylallyl alcohols and some of the reactions." By D. I. DUVEEN and J. KENYON.
- "Fluorescence studies. Part I. Phenylated anthracenes." By Y. HIRSHBERG and I. HASKELBERG.
- "Blood sugar: micro-estimation by diffusion into a soap-silicate gel." By H. KRALL.
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