

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETING IN LONDON.

Thursday, February 15th, 1940, at 2.30 p.m.

Urban Memorial Lecture, by Dr. A. S. Russell, M.C., M.A.

MEETINGS OUTSIDE LONDON.

BIRMINGHAM.

Monday, February 19th, 1940, at 4.30 p.m. **Tilden Lecture** entitled "Recent Progress in the Chemistry of Plant Gums and Pectic Materials," by Professor E. L. Hirst, M.A., D.Sc., F.R.S., to be held in the Chemistry Theatre, The University, Edgbaston.

GLASGOW.

Friday, February 16th, 1940, at 7 p.m. **Lecture** entitled "Ionisation and its Chemical Significance," by Professor W. F. K. Wynne-Jones, B.Sc., to be held in the Societies' Room, The Royal Technical College. Joint meeting with the local sections of the Institute of Chemistry and Society of Chemical Industry. Annual Business Meeting of Local Fellows at 6.30 p.m.

NORTH WALES.

Friday, February 23rd, 1940, at 5.15 p.m. **Lecture** entitled "William Hyde Wollaston," by Mr. L. F. Gilbert, B.Sc., F.I.C., to be held in the Lecture Theatre, Chemistry Department, University College, Bangor. Joint Meeting with the University College of North Wales Chemical Society.

Friday, March 8th, 1940, at 5.15 p.m. **Lecture** entitled "The Chemist in the Garden," by Mr. H. J. Evans, B.Sc., A.I.C., to be held in the Lecture Theatre, Chemistry Department, University College, Bangor. Joint Meeting with the University College of North Wales Chemical Society.

NOTTINGHAM.

Friday, February 2nd, 1940, at 6 p.m. **Lecture** entitled "Applications of Reaction Kinetics to Problems of Organic Chemistry," by Dr. H. B. Watson, F.I.C., to be held in the Chemistry Lecture Theatre, University College, Shakespeare Street.

SHEFFIELD.

Monday, February 19th, 1940, at 5.30 p.m. **Tilden Lecture** entitled "The Present State of Valency Theory," by Dr. L. E. Sutton, M.A., to be held in the Lecture Theatre of the Chemistry Department, The University, Western Bank.

Friday, March 8th, 1940, at 5.30 p.m. **Lecture** entitled "Biological Applications of Synthetic Chemistry," by Professor J. W. Cook, D.Sc., Ph.D., F.R.S., to be held in the Lecture Theatre of the Chemistry Department, The University, Western Bank.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Minutes of a SCIENTIFIC MEETING'

held at Burlington House, London, W. 1, on Thursday, January 18th, 1940, at 2.30 p.m.

Sir ROBERT PICKARD, D.Sc., F.R.S., Vice-President, was in the Chair, and welcomed the visitors present.

The minutes of the Scientific Meeting on December 14th, 1939, 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.
Douglas H. Baird	1916.	January 6th, 1940.
William H. Bayliss	1906.	September 27th, 1939.
Walter L. Blackman	1899.	January 10th, 1940.
William A. S. Calder.....	1891.	January 6th, 1940.
Thomas Hartley	1897.	December 16th, 1939.
John Haycock	1910.	June 5th, 1939.
George W. T. Horrod	1904.	December 26th, 1939.
Morris C. Lamb	1900.	January 10th, 1940.
Edmund Neville Nevill.....	1871.	January 14th, 1940.

FORMAL ADMISSION OF FELLOWS.

The following were formally admitted Fellows of the Chemical Society: Elemer Forbat, John Gadsby, G. Hughan Hampton, A. E. Wilder Smith, Hans A. Fischer.

After a brief introduction, the CHAIRMAN called on Professor J. D. Bernal to deliver his Lecture entitled "New Views on Colloid Chemistry."

At the conclusion of the lecture, a vote of thanks to the Lecturer was proposed by Professor F. G. Donnan, seconded by Professor A. Findlay and carried with acclamation.

OFFICIAL ANNOUNCEMENTS

CONGRATULATIONS.

The PRESIDENT has conveyed the congratulations of the Council to Mr. G. S. Albright, Sir Wyndham R. Dunstan, Dr. H. Forster Morley, Dr. Alexander Scott, and Mr. G. Stallard, who completed 60 years of Fellowship on December 18th.

REPRESENTATION ON OTHER BODIES.

The Council have appointed Professor F. G. Donnan, Mr. F. P. Dunn, and Professor I. M. Heilbron to represent the Society on the Chemical Council for 1940.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Messrs. P. Appleyard, P. K. Dutt, J. A. Newton Friend, W. E. Garner, F. W. Kirkbride, W. G. Polack, J. E. B. Price, and G. W. Young, who have contributed to the Publications Fund for 1940, and to Dr. R. H. Atkinson for a contribution of £3 to the funds of the Society.

The Council have received a bequest of £100 under the will of the late Mr. Emile Mond.

ANNIVERSARY MEETINGS.

The Anniversary Meetings of the Society will be held in London on April 4th, 1940. A further announcement will be made.

VACANCIES ON COUNCIL.

The names of the members of Council who retire at the Annual General Meeting on April 4th, 1940, are as follows :

Vice-Presidents who have filled the office of President : Professor N. V. SIDGWICK and Professor W. P. WYNNE.

Vice-Presidents who have not filled the office of President : Professor J. C. PHILIP and Sir ROBERT H. PICKARD.

Elected Ordinary Members of Council.

Constituency I (South-East England)

Professor H. V. A. BRISCOE, Dr. F. B. KIPPING, Professor R. ROBISON, and Dr. W. H. J. VERNON.

Constituency III (North-West England, North Wales, and the Isle of Man).

Dr. E. H. RODD.

The above are ineligible for election to the same office until after the lapse of one year except in so far as special provision is made in Bye-Law 47 for the appointment of Vice-Presidents who have filled the office of President.

In accordance with Bye-Law 47, Professor N. V. Sidgwick continues in office and Sir Gilbert T. Morgan becomes a Vice-President who has filled the office of President.

In June 1939 the Council accepted the resignation of Professor J. W. Cook from the office of Honorary Secretary as from the end of September, and on September 22nd appointed Professor W. Wardlaw to this office until the next Annual General Meeting.

NOTICE is hereby given that in accordance with the Bye-Laws the following vacant places in the Council fall due to be filled at the Annual General Meeting to be held on April 4th, 1940 :

Honorary Secretary *One vacancy.*

Vice-Presidents who have not filled the office of President *Two vacancies.*

Elected Ordinary Members of Council :

Constituency I (South-East England) *Four vacancies.*

„ **III** (North-West England, North Wales, and the
Isle of Man) *One vacancy.*

In accordance with Bye-Law 23, the Council has made the following nomination :

Honorary Secretary : Professor W. WARDLAW.

Nominations for the offices of Honorary Secretary, and Vice-Presidents who have not filled the office of President, may be made in writing **signed by at least twenty Fellows.**

Fellows resident in a constituency may nominate any Fellow resident in that constituency for election to the Council to fill a vacancy among Elected Ordinary Members of Council allotted to that Constituency. Every such nomination must be in writing **signed by at least fifteen Fellows resident in that constituency.**

Every nomination must relate to one vacant place only, and must be accompanied by a signed declaration by the nominee that he is willing to accept office, if elected.

All nominations must be received by the Honorary Secretaries at the Society's Rooms **not later than first post on Wednesday, February 14th, 1940.**

SUPPLY OF CHEMISTS TRAINED IN RESEARCH.

The Council have had under consideration the best policy for ensuring for the future an adequate supply of chemists trained in research, and desire to draw the attention of Heads of Departments where Chemists are trained to the following :

1. The existing arrangements for reserving Research Students of military age through the machinery of the Joint Recruiting Board.
2. The importance, for the present at least, of Research Chemists capable of original investigation not being engaged in work of routine character.
3. The advisability of every Research Student consulting the Head of his Department before accepting a post.

RESEARCH FUND.

The Council have decided to hold a further meeting of the Research Fund Committee in the spring of 1940, at which applications for grants from those undertaking research suggested by the Advisory Research Council will be considered. Forms of Application, which can be obtained from the General Secretary, should be received not later than **Friday, March 1st, 1940.**

ANNUAL REPORTS.

Fellows who have not applied for the *Annual Reports* for 1939, at the reduced price of 5s. 6d., should send in their applications to the General Secretary as soon as possible.

FELLOWSHIP.

The resignation of 25 Fellows have been accepted, the names of 3 Fellows have been removed from the List of Fellows, and the following 27 new Fellows have been elected :

On January 18th :

Robert William Ancrum.	Thomas Were Howard.
Godfrey Paul Armstrong.	Frank Howlett.
Richard Frank Barrow.	William Arthur Johnson.
Richard Stanley Burn.	Harold Wilfred Jones.
Paul Alexander Cartwright.	Neville Thomas Jordan.
Malcolm Turner Clark.	Frederick James Macdonald.
David Vanner Crawford.	Herbert John Mann.
Trevor Arnold Evans.	Bertie Cecil Platt.
Douglas Hugh Everett.	Bernard Edward Pritchard.
Charles Edward Fishwick.	Jack Sutton.
Frederick Maurice Valentine Flint.	John Francis Thomson.
George Grosvenor Freeman.	Kenneth Joseph Verrill.
James Graham.	Norman Walker.
Henry John Godfrey Hayman.	

GENERAL ANNOUNCEMENTS**BOARD OF TRADE.**

The Treasury have made an order under Section 10(5) of the Finance Act, 1926, continuing the exemption from Key Industry Duty of a number of articles, a list of which has been placed on the Society's Notice Board. Copies of the Treasury Order entitled the Safeguarding of Industries (Exemption) No. 8 Order, 1939, may be obtained from H.M. Stationery Office.

LEVERHULME RESEARCH FELLOWSHIPS 1940.

Application is invited for (i) Fellowships, or (ii) Grants in aid of research. The Fellowships or Grants are intended for senior workers who are prevented from carrying out research work by routine duties or pressure of other work. They are limited to British-born subjects normally resident in Great Britain. In exceptional circumstances the Trustees may waive the condition as to residence.

The Trustees are also prepared to consider applications from groups of workers engaged upon co-operative programmes of research—particularly from those engaged upon long-distance programmes or in Institutions in which the normal facilities for research have been curtailed by the War. The duration of the awards will not normally extend over more than two years or less than three months and the amount will depend on the nature of the research and the circumstances of the applicant.

Forms of application which may be obtained from the Secretary, Dr. L. Haden Guest, M.C., M.P., Leverhulme Research Fellowships, Kingscote House, 1, Watergate, Blackfriars, London, E.C. 4., must be received on or before March 1st, 1940. Awards will be announced in July and will date from September 1st, 1940.

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, February 12th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

Booth, Ernest, A.I.C., British. 69, Hayeswater Road, Davyhulme, Manchester. Technical assistant.

Signed by : R. J. Rosser, W. E. Jones, R. E. Jones.

***Crofts, Frank Edward**, B.Pharm., Ph.C., British. University College, University Park, Nottingham. Demonstrator in Chemistry.

Signed by : Frank R. Bradbury, J. Masson Gulland, John C. Roberts, E. B. R. Prideaux.

***Given, Peter Hervey**, B.A. (Oxon.), British. St. Peter's Hall, Oxford. Graduate at Oxford University doing research for B.A. degree, Part II, and B.Sc.

Signed by : D. Ll. Hammick, W. Baker, G. D. Parkes.

***Hall, Rodney Thomas William**, British. 14, Verne Road, Rodwell, Weymouth. Student at King's College, London.

Signed by : G. M. Bennett, C. S. Salmon, E. W. McClelland.

***Harvey, John**, British. Coombebury, Grange Road, Caterham. Student at King's College, London.

Signed by : G. M. Bennett, C. S. Salmon, E. W. McClelland.

Johnson, John Raven, Ph.D. (Illinois), American. Baker Laboratory, Cornell University, Ithaca, N.Y. Professor of Chemistry.

Signed by : H. R. Ing, C. H. Desch, N. V. Sidgwick, T. W. J. Taylor, R. Robinson, W. H. Mills.

Lapsley, Robert William, B.Sc.Hons. (Glas.), British. 25, Carolside Avenue, Clarkston, Renfrewshire. Research Student.

Signed by : J. W. Cook, T. S. Patterson, James D. Loudon.

***Loudfoot, James Herbert**, B.Sc.Hons. (Glas.), British. 3, Grantley Gardens, Shawlands, Glasgow, S. 1. Research Student at Glasgow University.

Signed by : T. S. Patterson, J. W. Cook, Andrew Kent.

***Martin, Graham Robert**, A.R.C.S., British. 113, Shepherds Lane, Dartford. Research Student.

Signed by : H. J. Emeléus, R. H. Purcell, A. G. Maddock.

Miller, Bruce Hill, B.Sc. (Sydney), British. 1603, Pacific Highway, Wahroonga, Sydney, N.S.W. Analytical Chemist with The Shell Company of Australia, Ltd.

Signed by : Charles E. Fawsitt, M. F. Redies, J. C. Earl.

***Nicholson, Anthony John Connal**, M.Sc. (N.Z.), British. Emmanuel College, Cambridge. Research Student.

Signed by : R. G. W. Norrish, Fredk. S. Dainton, J. A. Berriman.

* Reduced Annual Subscription.

***Sayer, Harry Simpson**, B.Sc.Hons. (Leeds), Diploma in Dyeing (Leeds), City and Guilds Final Certificates in Dyeing (Cotton, Wool and Silk) and in Chemistry of Intermediates, British. 44, Bulstrode Avenue, Hounslow. Works Chemist in Dyestuffs Factory.

Signed by : Frederick M. Rowe, Arnold T. Peters, J. W. Baker, H. Burton, E. Rothstein.

Walsh, Edward O'Farrell, Ph.C., M.P.S., British. The Pharmaceutical Department, Guy's Hospital, S.E.1. Pharmacist at Guy's Hospital and Student at Birkbeck College.

Signed by : George W. Ferguson, F. Barrow, Wm. Wardlaw.

***Waymouth, Charity**, B.Sc. (Lond.), British. 37, Lansdowne Road, Crumpsall. Biochemist at Crumpsall Hospital.

Signed by : E. E. Turner, Margaret M. Jamison, F. B. Kipping.

UNDER SPECIAL PROVISIONS APPERTAINING TO APPLICANTS RESIDENT ABROAD :

Boissonnas, Charles Guy, D.Sc. (Geneva), Swiss. Faculté des Sciences, Université de Neuchatel. Professor of Physical Chemistry.

Signed by : H. Goldstein.

Jackson, William Brannan, British. 12, North Tukoganj, Indore, Central India. Chemist, Master Dyer and Printer with Rajkumar Mills Ltd., Indore.

Signed by : Harold France, C. G. Raison.

Wareham, John Ferguson, B.Sc.Hons. (Leeds), Diploma in Dyeing (Leeds), City and Guilds Diplomas in Wool, Cotton and Silk Dyeing, British. c/o Messrs. George Henderson and Co., Ltd., 101/1, Clive Street, Calcutta. Chemist with Kassipur Co., Ltd., and Barnagore Jute Factory Co., Ltd.

Signed by : N. C. B. Hay.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between December 15th, 1939, and January 19th, 1940. (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 photoexpansion of chlorine : the recombination of chlorine atoms." By M. RITCHIE and R. L. SMITH.

"The optical activation of acids, and a new resolution process depending on it." By (MISS) M. M. JAMISON and E. E. TURNER.

"Note on the dimorphism of calcium thiocyanate tetrahydrate." By A. K. MCKERROW and V. J. OCCLESHAW.

"New synthesis of 4 : 4'-dimethoxy- $\alpha\alpha'$ -diethylstilbene." By E. PETERI.

"The nitrosation of phenols. Part XVII. *o*-Fluorophenol." By H. H. HODGSON and D. E. NICHOLSON.

"Colchicine and related compounds. Part I. Some observations on the structure of colchicine." By A. COHEN, J. W. COOK, and (MISS) E. M. F. ROE.

"Colchicine and related compounds. Part II. Synthesis of a simple analogue of *N*-acetylcolchicinol methyl ether." By J. W. COOK and L. L. ENGEL.

"The azo-group as a chelating group. Part IV. The constitution of the arylazo-*bis*-oximes." By (MISS) M. ELKINS and L. HUNTER.

"Catalytic toxicity and chemical structure. Part V. Simple anions containing toxic elements." By E. B. MAXTED and R. W. D. MORRISH.

"The kinetics of the reactions between iodine and bromine respectively on phosphorus in solution." By D. WYLLIE, M. RITCHIE, and E. B. LUDLAM.

"Arylpyridines. Part I. Phenylpyridines and nitrophenylpyridines." By J. W. HAWORTH, I. M. HEILBRON, and D. H. HEY.

- "Arylpyridines. Part II. Some substituted phenylpyridines." By E. C. BUTTERWORTH, I. M. HEILBRON, and D. H. HEY.
- "Arylpyridines. Part III. Anisyl- and nitroanisyl-pyridines." By J. W. HAWORTH, I. M. HEILBRON, and D. H. HEY.
- "Nitrosoacylarylamines. Part II. The action of nitrous fumes on acylarylamines." By J. W. HAWORTH and D. H. HEY.
- "Nitrosoacylarylamines. Part III. A new method of preparation." By H. FRANCE, I. M. HEILBRON, and D. H. HEY.
- "Nitrosoacylarylamines. Part IV. The action of some nitrosoacylarylamines on pyridine." By J. W. HAWORTH, I. M. HEILBRON, and D. H. HEY.
- "Syntheses of 2-phenylnaphthalenes." By D. H. HEY and S. E. LAWTON.
- "The nitration of 6- and 7-methoxy-2-acetnaphthalide." By D. H. HEY and S. E. LAWTON.
- "The nuclear alkylation of aromatic bases. Part IV. The action of *n*-dodecyl alcohol on the hydrochlorides of α - and β -naphthylamine." By E. C. BUTTERWORTH and D. H. HEY.
- "Mechanism of aromatic side-chain reactions with special reference to the polar effects of substituents. Part X. Depolarisation potentials of *p*-substituted benzaldehydes in acid, neutral, and alkaline media at the dropping mercury cathode." By J. W. BAKER, (MISS) M. L. HEMMING, and W. C. DAVIES.
- "The structure and synthesis of baeekeol." By G. R. RAMAGE and W. J. I. STOWE.
- "Conjugated systems, light absorption, and 'Resonance.'" By A. BURAWOY.
- "Studies on Argentine plants. Part II. Aspidospermine from *Vallesia glabra* and *Vallesia dichotoma*." By V. DEULOFEU, J. DE LANGHE, R. LABRIOLA, and (in part) V. CÁRCAMO.
- "The gravimetric estimation of phosphate and vanadate and some notes on urine analysis." By D. T. LEWIS.
- "The associating effect of the hydrogen atom. Part VI. The acid hydrazides." By H. T. HAYES and L. HUNTER.
- "The volumetric estimation of small quantities of barium and sulphate with barium rhodizonate as an indicator: the estimation of sulphur in iron pyrites." By C. C. MILLER.

ADDITIONS TO THE LIBRARY.

I. Donations.

BUTLER, J. A. V. Electrocapillarity: the chemistry and physics of electrodes and other charged surfaces. London 1940. pp. x + 208. ill. 12s. 6d. net. (*Recd.* 11/1/40.)

From the Publishers: Messrs. Methuen & Co.

EGYPT. *Survey and Mines Department*. Contributions to the geography of Egypt. [With chemical and physical data.] By JOHN BALL. Cairo 1939. pp. xvi + 308. ill. (*Reference.*) P.T. 50.

From the Ministry of Finance.

PERKIN, F. STANLEY, and KIPPING, F. BARRY. Organic chemistry. Part III. Revised edition. London 1939. pp. viii, 615 to 1029. 9s. net. (*Recd.* 11/1/40.) From the Publishers: Messrs. W. & R. Chambers.

SOCIETY OF CHEMICAL INDUSTRY. Vitamin E. A symposium held under the auspices of the Food Group (Nutrition Panel). London 1939. pp. viii + 88. 5s. net. (*Recd.* 28/12/39.) From the Society.

II. By Purchase.

KENDALL, JAMES. Young chemists and great discoveries. London 1939. pp. xvi + 272. ill. 7s. 6d. net. (*Recd.* 18/12/39.)

III. Pamphlets.

BAKER & Co. Bibliography of patents on palladium as a catalyst. Part i. United States and German patents. Newark, N.J. [1939]. pp. 24.

— Platinum metals and the chemical industry. Newark, N.J. 1939. pp. 14. ill.

INSTITUTE OF PUBLIC CLEANSING. The agricultural value of screened dust. By WILLIAM B. STRAIN. [Glasgow] 1939. pp. 21. ill.

RADLOFF, ELLEN M., and OSBORN, T. W. B. Malnutrition in South Africa. Johannesburg 1939. pp. 34.

STAUDINGER, HERMANN. Über die makromolekulare Chemie. Freiburg 1939. pp. 32.

WIGGIN, HENRY, & Co. Inconel: an account of its properties, typical uses and fabrication. London [1940]. pp. 23. ill.

February 1940

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETING IN LONDON.

Thursday, April 4th, 1940. **The Ninety-Ninth Annual General Meeting** at Burlington House. Further particulars will be announced shortly.

MEETINGS] OUTSIDE LONDON.

NORTH WALES.

Friday, March 8th, 1940, at 5.15 p.m. **Lecture** entitled "The Chemist in the Garden," by Mr. H. J. Evans, B.Sc., A.I.C., to be held in the Lecture Theatre, Chemistry Department, University College, Bangor. Joint Meeting with the University College of North Wales Chemical Society.

SHEFFIELD.

Friday, March 8th, 1940, at 5.30 p.m. **Lecture** entitled "Biological Applications of Synthetic Chemistry," by Professor J. W. Cook, D.Sc., Ph.D., F.R.S., to be held in the Lecture Theatre of the Chemistry Department, The University, Western Bank.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

Minutes of a SCIENTIFIC MEETING

held at Burlington House, London, W. 1, on Thursday, February 15th, 1940, at 2.30 p.m.

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

The minutes of the Scientific Meeting of January 18th, 1940, were taken as read, and were confirmed and signed.

The PRESIDENT referred to the loss sustained by the Society, through death, of Sir Gilbert Morgan, Past-President, on February 1st, 1940, and stated that the Council had passed the following resolution :

The President, Officers, and Council of the Chemical Society learned with profound sorrow at their meeting on the 15th February, 1940, of the death on the 1st February of their distinguished Past-President, Sir Gilbert Morgan.

They desire to express their appreciation of the eminent services he has rendered to the Science of Chemistry by his outstanding researches in so many fields of pure and applied Chemistry. A man with almost unlimited capacity for work and possessing the gift of inspiring those who worked with him, he never spared himself in his efforts to further the progress of Chemistry.

The Council record with gratitude the signal services he rendered to the Chemical Society since he was elected a Fellow in February 1898. He edited the *Journal* for several years, and served on the Council for periods amounting in all to 16 years, holding the offices of Secretary, Vice-President, and President. His genial presence and wise counsel will be sorely missed by his colleagues on the Council of the Chemical Society and by the members of the Bureau of Chemical and Physiological Abstracts, of which he was Chairman.

The Council desire to convey their deep sympathy to Lady Morgan in her irreparable loss.

The company present stood while the resolution was read.

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

	Elected.	Died.
William F. Mawer	1893	January 31st.
Frank Moul	1886	February 8th.
Benjamin D. Porritt	1906	January 28th.
Frank T. Shutt	1886	January 5th.

The following announcement was made :

NOMINATIONS FOR VACANT PLACES ON THE COUNCIL.

The following is a list of the nominations for the new Council :

Honorary Secretary : (One vacancy.) *PROF. W. WARDLAW.

Vice-Presidents, who have filled the office of President. (Two vacancies.)

*PROF. N. V. SIDGWICK.

*PROF. W. P. WYNNE.

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

*PROF. C. N. HINSHELWOOD.

PROF. J. L. SIMONSEN.

Elected Ordinary Members of Council :

Constituency I. S.E. England. (*Four vacancies.*)

DR. D. H. HEY.

(London.)

DR. F. G. MANN.

(Cambridge.)

DR. E. A. MOELWYN-HUGHES.

(Cambridge.)

DR. S. G. P. PLANT.

(Oxford.)

DR. G. S. WHITBY.

(London.)

Constituency III. N.W. England, N. Wales and Isle of Man. (*One vacancy.*)

PROF. T. P. HILDITCH.

(Liverpool.)

* Nominated by Council.

In accordance with the Bye-Laws, the Officer, Vice-Presidents, and Elected Ordinary Member of Council for Constituency III who have been nominated will be declared elected at the Annual General Meeting.

As the number of nominations received for Elected Ordinary Members of Council in Constituency I exceeds the number of vacancies it will be necessary to hold a ballot, the result of which will also be declared at the Annual General Meeting to be held in the Society's Rooms at Burlington House, Piccadilly, on Thursday, April 4th, 1940.

APPOINTMENT OF SCRUTATORS.

Mr. A. King and Dr. D. J. G. Ives were appointed Scrutators to assist in the counting of votes recorded for the election of Elected Ordinary Members of Council in Constituency I.

URBAIN MEMORIAL LECTURE.

After a brief introduction, the PRESIDENT called on Dr. A. S. Russell to deliver the Urbain Memorial Lecture.

At the conclusion of the lecture, a vote of thanks to the Lecturer was proposed by Professor A. C. G. Egerton, seconded by Professor C. S. Gibson, and carried with acclamation.

MEETINGS OUTSIDE LONDON

LECTURE AT EDINBURGH, JANUARY 22nd.

A joint meeting of the Society with the Edinburgh and East of Scotland sections of the Society of Chemical Industry and the Institute of Chemistry was held at 7 p.m. in the North British Station Hotel, Edinburgh, on January 22nd, with Dr. E. G. V. Percival in the Chair. Dr. W. T. Astbury, M.A., Sc.D., F.Inst.P. gave a fascinating lecture on "Proteins under the X-rays" illustrated by photographs and models. The lecture was very well attended, and in the subsequent discussion the following took part: Dr. C. A. Beevers, Dr. E. B. Ludlam, Dr. P. Eggleton, Dr. W. O. Kermack, Dr. T. R. Bolam, Mr. C. Elliot Dodds, Dr. A. M. Smith, Professor H. J. Muller, Major Robert Bruce and others. A vote of thanks to the Lecturer, proposed by Dr. Beevers, was carried with acclamation.

LECTURE AT SWANSEA, FEBRUARY 9th.

A meeting of the Society was held jointly with the University College of Swansea Chemical Society at 6.30 p.m. on Friday, February 9th, in the Royal Institution of South Wales, Swansea. In the absence of the local representative the Chair was taken by Sir Robert Robertson, K.B.E., F.R.S. Professor G. M. Bennett, M.A., Sc.D., delivered a lecture on "Liquid Crystals." After describing the mesomorphic nature of liquid crystals, the Lecturer traced the historical development of their study and described the characteristic properties of the three chief types of liquid crystal.

Professor Bennett then gave a fascinating demonstration of the formation and behaviour of liquid crystals. Using projection in polarised light, he showed examples of simple

polymorphism, of the cholesteryl type of liquid crystal, and of substances giving either the nematic or smectic type. Finally, using *p*-alkoxy-benzoic acids he exemplified compounds which give not only both nematic and smectic liquid crystals, but also polymorphic solid forms.

The lecture and demonstrations were warmly applauded, and a hearty vote of thanks, accorded to Professor Bennett on the proposition of Mr. E. E. Ayling, seconded on behalf of the College Chemical Society by Mr. T. I. Watkins, was carried with acclamation.

OFFICIAL ANNOUNCEMENTS

CONGRATULATIONS.

The PRESIDENT has conveyed the congratulations of the Council to Mr. S. H. Collins, Mr. J. B. Coppock, Mr. T. S. Dymond, Sir Philip J. Hartog, Dr. E. P. Perman, and Mr. E. Russell, who completed 50 years of Fellowship on February 6th.

LOCAL REPRESENTATIVE.

The Council have accepted with regret the resignation of Dr. A. B. Crawford from the office of Local Representative for Glasgow as from the Annual General Meeting on April 4th, and have expressed their thanks to him for the valuable services he has rendered to the Society. Dr. T. S. Stevens has accepted this office in his place.

ACKNOWLEDGMENTS.

The Council have conveyed thanks to Sir Prafulla C. Rây for a contribution of £3 to the Library Fund; also to Sir David Rivett and to Dr. H. G. Rule for contributions of £1 each to the Publications Fund.

FELLOWSHIP.

The resignations of 11 Fellows have been accepted and the following 17 new Fellows were elected on February 15th :

Charles Guy Boissonnas.	James Herbert Loudfoot.
Ernest Booth.	Graham Robert Martin.
Frank Edward Crofts.	Bruce Hill Miller.
Peter Hervey Given.	Anthony John Connal Nicholson.
Rodney Thomas William Hall.	Harry Simpson Sayer.
John Harvey.	Edward O'Farrell Walsh.
William Brannan Jackson.	John Ferguson Wareham.
John Raven Johnson.	Charity Waymouth.
Robert William Lapsley.	

GENERAL ANNOUNCEMENTS

BOARD OF TRADE.

The Board of Trade have made an Order under which exports of superphosphate of lime and phosphate rock to Eire will be subject to export licence from February 1st. Applications for licences should be made to the Export Licensing Department, Inveresk House, 346, Strand, W.C. 2.

The Treasury have made Orders under Section 10 (5) of the Finance Act, 1926, as amended by Section 2 (1) of the Import Duties (Emergency Provisions) Act, 1939, exempting certain articles from Key Industry Duty from February 7th, 1940, viz. aniline and phthalic anhydride, until June 30th, 1940, and certain metallic residues, containing sodium molybdate and/or sodium vanadate, until December 31st, 1940; also dodecyl alcohol from February 21st to June 30th, 1940.

Copies of the Treasury Orders, which are entitled "The Safeguarding of Industries (Exemption) (Nos. 1, 2, 3, and 4) Orders, 1940" 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, March 25th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.*)

Bennett, Reginald Robert, B.Sc. (Lond.) F.I.C., Ph.C., British. The British Drug Houses Ltd., Graham Street, City Road, N. 1. Technical Director of the British Drug Houses Ltd.

Signed by : Charles Alex Hill, Francis H. Carr, P. G. Marshall.

Campbell, Ishbel Grace MacNaughton, B.Sc. and Ph.D. (St. Andrews), British. 22, Glebe Court, Highfield, Southampton. Lecturer in Organic Chemistry, University College, Southampton.

Signed by : N. K. Adam, Alexander Lawson, John Read.

Campbell, Norman Robert, Ph.D. (Lond.), A.I.C., British. 282, Cannon Hill Lane, S.W. 20. Research Organic Chemist (Halley-Stewart Fellow), Courtauld Institute of Biochemistry, Middlesex Hospital Medical School.

Signed by : C. T. Bennett, E. de Barry Barnett, N. F. Goodway, F. W. Chattaway.

Coumoulos, George Demetrius, D.Sc. (Athens), Greek. 10, Emmanuel Road, Cambridge. Research Student at Department of Colloid Science, Cambridge.

Signed by : Eric K. Rideal, Oliver Gatty, D. D. Eley.

Dagley, Jack, First Class Certificates in Water Technology at Hackney Technical Institute, British. Burgess Zeolite Co., Ltd., 68-72, Horseferry Road, Westminster, S.W. 1. Technical Director and Chief Chemist to above company.

Signed by : James P. O'Callaghan, L. O. Newton, F. Courtney Harwood.

Gurr, Edward, British. 13, Napier Avenue, S.W. 6. Manager, George T. Gurr Laboratories, S.W. 6.

Signed by : George T. Gurr, K. A. Williams, J. C. Crocker.

Meakins, Reginald John, B.Sc. (Sydney), British. Imperial College, S.W. 7. Organic Research Student.

Signed by : L. C. Cross, R. J. Nicholls, P. A. Wilkinson.

Pizer, Norman Henry, M.Sc. (Reading), Ph.D. (Lond.), F.I.C., British. South-Eastern Agricultural College, Wye, Ashford. Research and Advisory Agricultural Chemist and Head of Department.

Signed by : T. Wallace, R. L. Wain, Wm. Goodwin.

Wadsworth, Raymond Varian, A.I.C., British. 48, Bunbury Road, Northfield, Birmingham. Chief Chemist, Cadbury Bros., Bournville.

Signed by : Garfield Thomas, Howard A. Caulkin, Geo. King.

Williams, Alan Hugh, B.A. and B.Sc. (Oxon.), British. 70, St. Paul's Road, Coventry. Research Chemist, Courtaulds Ltd., Coventry.

Signed by : E. J. Bowen, Ronald P. Bell, J. H. Wolfenden.

Wright, Mrs. Winifred Grace, B.Sc. (Lond.), D.I.C., British. 35, Milbourne Lane, Esher. Chemistry Research at Battersea Polytechnic.

Signed by : J. Kenyon, C. W. Davies, A. Houston.

UNDER SPECIAL PROVISIONS APPERTAINING TO APPLICANTS RESIDENT ABROAD :

Breuer, George Eugene Francis, Dr.phil.nat. and Chem.Dr. (Vienna), Austrian. 28, Weymouth Street, W. 1.

Signed by : R. Lessing.

***Cane, Reginald Frank**, B.Sc.Hons. (Tasmania), A.A.C.I., British. National Oil Pty. Ltd., Glen Davis, N.S.W. Research Chemist with above company at Sydney.

Signed by : E. E. Kurth, G. C. Israel.

Giral, Francisco, Ph.D. (Madrid), Formerly Professor of Organic Chemistry at University of Salamanca, Spanish. Panuco 18, D., Mexico, D.F. Research Assistant in Chemistry Department of Mexico University.

Signed by : Robert Robinson.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between January 19th and February 20th, 1940. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "Preparation of certain optically active semicarbazides and a resolution of benzoin." By A. J. LITTLE, J. M'LEAN, and F. J. WILSON.
- "Structure of the aluminium lakes of some azo-dyes and of alizarin." By W. F. BEECH and H. D. K. DREW.
- "Copper lakes of azo-dyes. Some further types." By W. F. BEECH and H. D. K. DREW.
- "Studies in the amino-sugars. Part II. The action of dilute alkali on *N*-acyl glucosamines." By T. WHITE.
- "Studies on vitamin E. Part VII. Further investigations on homologues of α -tocopherol." By (MISS) A. JACOB, F. K. SUTCLIFFE, and A. R. TODD.
- "1 : 3 : 8-Trihydroxyanthraquinone." By W. K. ANSLOW, J. BREEN, and H. RAISTRICK.
- "The influence of alkyl groups upon reaction velocities in solution. Part IV. The alkaline and acid hydrolyses of the ethyl esters of the lower saturated aliphatic acids in aqueous acetone." By G. DAVIES and D. P. EVANS.
- "Some reactions of γ - Δ^{β} -lactones." By E. WALTON.
- "Solvent effects with optically active saturated hydrocarbons." By A. W. H. PRYDE and H. G. RULE.
- "The mercuration of some simple derivatives of γ -pyrone." By J. R. FILES and F. CHALLENGER.
- "Catalytic toxicity and chemical structure. Part VI. The poisoning of platinum catalysts by metals." By E. B. MAXTED and A. MARSDEN.
- "Calythron." By A. R. PENFOLD and J. L. SIMONSEN.
- "Experiments on the synthesis of 1 : 2-dimethylcyclohexylacetic acid." By F. C. COPP and J. L. SIMONSEN.
- "Resolution of *dl*- Δ^2 -cyclogeranic acid." By D. J. BENNETT, G. R. RAMAGE, and J. L. SIMONSEN.
- "The composition of mink fat." By W. E. KEMP.
- "Amino-acid and peptide esters of choline as possible analogues of the oxytocic hormone of the posterior lobe of the pituitary gland. Part I." By J. M. GULLAND, M. W. PARTRIDGE, and S. S. RANDALL.
- "Mechanism of the reaction between arylamines and benzoin." By R. M. COWPER and T. S. STEVENS.
- "Absorption spectra of *N*-substituted-auramine dyes." By G. E. F. BREUER and J. SCHNITZER.
- "The reversibility of the rearrangement of *o*-hydroxy-sulphones." By R. R. COATS and D. T. GIBSON.
- "The synthesis of growth-inhibitory polycyclic compounds. Part II." By G. M. BADGER and J. W. COOK.
- "An attempted synthesis of papaverine." By J. F. KEFFORD.
- "The kinetics of the inhibition of the reaction between chlorine and nitric oxide." By E. M. STODDART.

- "Syntheses in the indole series. Part I. Synthesis of indolyl-3-glyoxylic acid and of *r*-3-indolylglycine." By J. W. BAKER.
- "The steric course of the hydrolysis of α -phenylethyl chloride in acetone containing mercuric chloride." By D. R. READ and W. TAYLOR.
- "Studies on hydrogen cyanide. Part XI. The constitution of the double compound of hydrogen cyanide and aluminium chloride." By L. E. HINKEL and T. I. WATKINS.
- "The properties of 3 : 6-anhydrogalactose." By W. N. HAWORTH, J. JACKSON, and F. SMITH.
- "Studies in polymorphism. Part V. The linear rate of transformation of monoclinic into rhombic sulphur." By P. G. ELIAS, J. E. D. JAMES, and N. H. HARTSHORNE.
- "The constituents of some Indian essential oils. Part XXVII. A synthesis of *dl*- α -curcumene." By F. D. CARTER, J. L. SIMONSEN, and H. O. WILLIAMS.
- "Adsorption at the interface between two fluids. Part III. The adsorption of five dyestuffs at a mercury-water interface." By C. W. GIBBY and C. ARGUMENT.
- "X-Ray studies of the porphins." By (Miss) I. WOODWARD.
- "Use of the benzyl radical in syntheses of methylated sugars. Part I. 4 : 6-Dimethyl glucose." By D. J. BELL and J. LORBER.

ADDITIONS TO THE LIBRARY

I. Donations.

CHALMERS, BRUCE. The physical examination of metals. Vol. I. Optical methods. London 1939. pp. viii + 181. ill. 14s. net. (*Recd.* 13/2/40.)

From the

Publishers : Messrs. Edward Arnold & Co.

OIL AND COLOUR CHEMISTS' ASSOCIATION. Varnish making : papers read at a symposium. London 1939. pp. x + 225. ill. (*Recd.* 3/2/40.)

From the Association.

II. By Purchase.

BRADDICK, H. J. J. Cosmic rays and mesotrons. Cambridge 1939. pp. x + 68. ill. 5s. net. (*Recd.* 15/2/40.)

BURTON, DONALD, and ROBERTSHAW, GEORGE F. Sulphated oils and allied products : their chemistry and analysis. London 1939. pp. vi + 163 + iv. ill. 12s. 6d. net. (*Recd.* 15/2/40.)

FOWLER, R. H., and GUGGENHEIM, E. A. Statistical thermodynamics. Cambridge 1939. pp. x + 693. ill. 40s. net. (*Recd.* 15/2/40.)

GREAVES, RICHARD HENRY, and WRIGHTON, HAROLD. Practical microscopical metallography. 3rd edition. London 1939. pp. xii + 272. ill. 18s. net. (*Recd.* 15/2/40.)

JORPES, J. ERIK. Heparin, its chemistry, physiology and application in medicine.

London 1939. pp. xii + 87. ill. 7s. 6d. net. (*Recd.* 15/2/40.)

MACDOUGALL, F. H. Thermodynamics and chemistry. 3rd edition. New York 1939. pp. x + 491. ill. \$5. (*Recd.* 25/1/40.)

MCLESTER, JAMES S. Nutrition and diet in health and disease. 3rd edition. Philadelphia 1939. pp. 838. ill. \$8. (*Recd.* 15/2/40.)

MATHEWS, ALBERT P. Physiological chemistry. 6th edition. [Baltimore] 1939. pp. xvi + 1488. ill. \$8. (*Recd.* 15/2/40.)

MILLIKAN, R. A. Cosmic rays : three lectures. Cambridge 1939. pp. viii + 134. ill. 8s. 6d. net. (*Recd.* 15/2/40.)

RICHTERS, C. E. Die Tiere im chemischen Kriege. 4th edition. Berlin 1939. pp. 280. M. 13.60. (*Recd.* 15/2/40.)

TRESSLER, DONALD K., JOSLYN, MAYNARD A., and MARSH, GEORGE L. Fruit and vegetable juices. New York 1939. pp. xiv + 518. ill. \$6. (*Recd.* 15/2/40.)

III. Pamphlets.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Methods for the detection of toxic gases in industry. Leaflet No. 7. Carbon monoxide. London 1939. pp. iv + 9. ill.

March 1940

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETINGS IN LONDON.

Thursday, April 4th, 1940.

At 2.30 p.m. **99TH ANNUAL GENERAL MEETING.**

At 3 p.m. (approximately). The President, **Sir Robert Robinson**, M.A., D.Sc., LL.D., F.R.S., will deliver his Presidential Address entitled "**Some Biological Aspects of Organic Chemistry. (a) Recent Progress in Chemotherapy, (b) Structural Relations in the Sterol Group.**"

Interval for Tea.

At 5 p.m. **Professor E. K. Rideal**, M.B.E., M.A., D.Sc., F.R.S., will deliver the **Sørensen Memorial Lecture.**

Thursday, April 18th, 1940, at 6 p.m.

Lecture entitled "**The Polymerisation of Vinyl Compounds,**" by **Professor R. G. W. Norrish**, Ph.D., Sc.D., F.R.S.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

MEETINGS OUTSIDE LONDON

LECTURE AT BIRMINGHAM, FEBRUARY 19th.

A joint meeting of the Chemical Society and the Birmingham University Chemical Society was held on February 19th in the Chemistry Lecture Theatre of the University, when the Tilden Lecture entitled "Recent Progress in the Chemistry of Plant Gums and Pectic Materials" was delivered by Professor E. L. Hirst, F.R.S. Both the Chairman (Professor W. N. Haworth, F.R.S.) and the lecturer referred in glowing terms to the work of Sir William Tilden, a former Professor of chemistry in this University.

Professor Hirst then gave his address in a manner which held the attention and stimulated the interest of a large audience. A vote of thanks proposed by Dr. S. Peat and seconded by Dr. F. Smith was carried with acclamation.

LECTURE AT BRISTOL, FEBRUARY 29th.

A joint meeting of the Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry was held at 7 p.m. in the University Chemical Department, Woodland Road, on February 29th, when Dr. H. W. Melville gave a lecture entitled "The Mechanism of the Synthesis of Large Molecules."

A description was given of the application of the principles of chemical kinetics to the formulation of the mechanism of the polymerisation of vinyl compounds in the vapour phase. The only satisfactory method of starting polymerisation is by direct photo-activation of the molecule, or by the addition of hydrogen atoms or methyl radicals to the monomeric vapour. In the latter case the active polymer is a free radical which may add on many monomeric units in a matter of a few milliseconds. Technique for measuring these short lifetimes involving the use of rotating sectors, and multiple sources of radiation were described. These free radical polymerisations often differ markedly from the direct photopolymerisation, from which it may be surmised that the latter reaction takes place by quite another mechanism. For example, this reaction is sometimes characterised by the fact that polymerisation in the dark, after illumination, occurs for extended periods. This not only allows the formation of molecules of extremely high molecular weight, but also provides a technique for building up molecular sandwiches of any desired constitution. Methods were described for determining kinetically the chain length of such photo polymers.

At the conclusion of the lecture, which was well attended, a vote of thanks to the Lecturer, proposed by Dr. E. B. Maxted and seconded by Professor W. E. Garner, was carried with acclamation, Dr. Melville making brief acknowledgment.

LECTURE AT CARDIFF, FEBRUARY 16th.

A joint meeting of the Society with the Chemical and Physical Society of the University College of South Wales and Monmouthshire was held in the University College, Cathays Park, at 6.30 p.m. on Friday, February 16th, 1940, with Dr. D. T. Lewis, President of the

College Society, in the Chair. Dr. F. G. Mann, D.Sc., Sc.D., F.I.C., delivered a lecture on "Recent work in the investigation of Molecular Structure." The Lecturer introduced the problem of the structure of bridged metallic compounds by reference to "double molecules" such as Al_2Cl_6 , and then dealt fully with the bridged derivatives of trialkylphosphines and arsines with palladous halides, which can theoretically exist in one unsymmetric and two symmetric forms. Chemical and physical evidence was adduced to demonstrate that such compounds are planar, possessing the *trans*-symmetric form in the crystalline state, and existing in solution as a tautomeric mixture of the two symmetric forms, whilst unbridged palladium compounds which could give the unsymmetric type do not react with palladous chloride. Bridged compounds of cadmium and mercury having tetrahedral structure were then described, including one containing both cadmium and mercury and one combining planar palladium with tetrahedral mercury. Dr. Mann concluded by describing some bridged gold compounds and the co-ordinated cuprous complex: $[\text{Et}_3\text{As} \rightarrow \text{CuI}]_4$.

A cordial vote of thanks to the lecturer, proposed by Dr. H. B. Watson and seconded, on behalf of the College Society, by Miss D. Clements, was carried with acclamation.

LECTURE AT GLASGOW, FEBRUARY 16th.

A meeting of the Society, in co-operation with the Local Sections of the Society of Chemical Industry and the Institute of Chemistry, the Alchemists' Society, and the Andersonian Chemical Society, was held at 7 p.m. on Friday, February 16th, in the Royal Technical College. Professor T. S. Patterson was in the Chair.

Professor W. F. K. Wynne-Jones, D.Sc., delivered a lecture on "Ionisation and its Chemical Significance." Pointing out that the earlier ionisation theory of Arrhenius suffered from the failure to understand the energetics of the process, the Lecturer then showed that the energy required to ionise an atom (as shown by its ionisation potential) could be supplied by the energy of hydration of the ion in solution (or by its lattice energy for the solid state), the existence and stability of the ion thus depending on its energy of hydration. The variation of the dissociation constants of weak acids with temperature can be correlated with the fact of hydration, as can also the changes in the rates of certain reactions such as racemisation.

The lecture was followed by a discussion, and a vote of thanks, proposed by Dr. J. A. Cranston, was carried with acclamation.

LECTURE AT NOTTINGHAM, MARCH 7th.

A meeting of the Society was held jointly with the East Midlands Section of the Institute of Chemistry and the Nottingham Section of the Society of Chemical Industry, at 7 p.m., in the Welbeck Hotel, Nottingham, on March 7th, with Dr. Hunter in the Chair.

Professor E. C. Dodds, M.V.O., D.Sc., F.R.C.P., delivered a lecture on "Hormones." The Lecturer gave an interesting historical account of the development of the subject, and concluded with a consideration of some more recent work. A discussion followed. The lecture was well attended, and a vote of thanks proposed by Mr. Harold Calam and seconded by Professor J. Masson Gulland was carried with acclamation.

OFFICIAL ANNOUNCEMENTS.

FELLOWS ON ACTIVE SERVICE.

Fellows, who are on active service with the Navy, Army and Air Force are requested to notify the General Secretary of the Society, giving such particulars as may be permissible, as to their rank, unit, etc.

GENERAL ANNOUNCEMENTS.

BOARD OF TRADE.

Import Order.

The Board of Trade have issued The Import (Certificates of Origin and Interest) Order, 1939, (Amendment) Order, 1940, dated February 22nd, 1940. As a result of this Amending Order, which came into force on March 1st, certificates of origin and interest will no longer be required for the following goods imported into the United Kingdom from any country :—

felspar; iron pyrites; nickel hydroxide; cotton yarns; woollen and worsted yarns; binder and reaper twine; rubber outer tyres; rubber inner tubes; news films; photographic prints; consignments of goods valued at less than £3.

Export Orders.

The Board of Trade have made the Export of Goods (Control) Orders No. 5 and No. 6. As a result of the former, a licence will be required for the export of creosote oil to any destination as from March 1st. The changes effected by the latter, which came into force on March 2nd are as follows :—

(a) Paper bags and paper sacks of which any side exceeds 400 square inches in area will require a licence for all destinations.

(b) Flowmeters not containing mercury may be exported to destinations within the British Empire without a licence (flowmeters containing mercury still require a licence for export to any destination).

(c) Sheep and cattle-dips exported to destinations outside the British Empire will require a licence in future only if they contain arsenic compounds. (No licence is required for the export of animal dips to Empire destinations.)

(d) Insecticides, fungicides, and weed killers; other than those containing certain specified constituents (*e.g.*, arsenic, cyanides, fluorides, cubé, derris, etc.) will no longer require a licence for any destination.

(e) Liquid chlorine may be exported to Empire destinations without a licence.

The Board of Trade have issued the Export of Goods (Control) (No. 8) Order, dated March 8th, which came into force on Monday, March 18th. The changes effected by this Order are as follows :—

(a) Licences will be required for the export to European destinations of andalusite, fibrolite, kyanite, sillimanite, and zircon.

(b) Licences will be required for the export to any destination of nearly all non-ferrous metals and alloys thereof in unwrought or semi-manufactured forms (including angles, shapes, sections, pipes, and tubes); waste cordage and waste twine; cadmium mass and cadmium sulphide; ethyl morrhuate and sodium morrhuate; and tar oil and other heavy coal tar oils.

(c) Licences will no longer be required for the export of graphite and ammonium chloride to destinations outside Europe.

(d) Licences will no longer be required for the export to any destination of single-vision spectacle lenses, silver wire, scythes, sickles, and other agricultural and horticultural tools (except forks, shovels, and spades).

Applications for export licences should be made to the Export Licensing Department, Inveresk House, 346, Strand, London, W.C.2, except in the case of applications for licences for paper bags and sacks, which should be sent to the Paper Control, Ministry of Supply, Great Western Hotel, Reading.

The full text of these orders will be published by H.M. Stationery Office and reproduced in the *Board of Trade Journal*.

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, April 15th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.*)

- *Chapman, John Harold**, British. 105, Woodcock Hill, Kenton, Harrow. Chemistry Student at Imperial College, S.W.7.
Signed by : E. R. H. Jones, H. V. A. Briscoe, H. F. Harwood.
- Fitzgerald, Maurice Edward Hugh**, B.Sc. (Lond.), British. 89, Devonshire Way, Shirley. Organic Chemist at Courtauld Institute of Biochemistry, Middlesex Hospital, W.1.
Signed by : Wilfrid Lawson, G. M. Richardson, F. W. Chattaway.
- *Green, John Herbert**, British. 23, Highlands Heath, S.W.15. Student of Chemistry for Part II Natural Sciences Tripos, Cambridge.
Signed by : F. G. Mann, D. Purdie, J. Chatt.
- *Harvey, Eleanor Mary Armine**, B.A. (Oxon.), British. Brooks Court, Camberley. Reading for Part II Chemistry and B.Sc. in Oxford.
Signed by : Ronald P. Bell, W. H. C. Simmonds, M. J. S. Dewar.
- *Holliman, Frederick George**, British. 21, Emery Street, Cambridge. Student at Trinity College, Cambridge, for Part II of Natural Sciences Tripos in Chemistry.
Signed by : F. G. Mann, D. Purdie, W. Cule Davies.
- Huang-Minlon**, Ph.D. (Berlin), Chinese. Courtauld Institute of Biochemistry, Middlesex Hospital, W.1. Research Organic Chemist.
Signed by : Wilfrid Lawson, F. W. Chattaway, E. R. Smith.
- Jordan, Denis Oswald**, M.Sc. (Lond.), A.I.C., British. Wynchgate, Alford Road, West Bridgford. Assistant Lecturer in Applied Chemistry at University College, Nottingham.
Signed by : J. Masson Gulland, E. B. R. Prideaux, John C. Roberts.
- *Lyon, Donald Robert**, British. 47, Prestbury Road, Cheltenham. Student of Trinity College, Cambridge, reading for Part II of Natural Sciences Tripos in Chemistry.
Signed by : F. G. Mann, D. Purdie, J. Chatt.
- *McLaren, Keith**, British. 40, Wensley Drive, Chapel Allerton, Leeds, 7. Student in Honours B.Sc. Colour Chemistry Leeds University.
Signed by : J. W. Baker, F. M. Rowe, F. R. Goss, F. Challenger, Arnold T. Peters, G. Hagues.
- Routledge, Donald**, B.Sc. Hons. and Ph.D. (St. Andrews), Carnegie Research Scholar (1928—35), British. Burrows Cottage, The Links, Pembrey. Managing Chemist.
Signed by : J. C. Irvine, John Dewar, J. W. H. Oldham.
- *Six, Charles George**, British. 8, Fillebrook Road, E.11. Research Chemist at Messrs. F. W. Berk & Co., Ltd.
Signed by : J. R. Boer, L. N. Tyrrell, E. de Barry Barnett.
- *Stacey, Gilbert Joseph**, British. Emmanuel College, Cambridge. Reading Chemistry for Part II of Natural Sciences Tripos, Cambridge.
Signed by : R. G. W. Norrish, F. G. Mann, P. Maitland.
- Steel, Frederick William**, Foundation Associate of the Australian Chemical Institute, British. South British Chambers, 23, Barrack Street, Perth. Public Analyst and Consulting Chemist.
Signed by : E. M. Watson, G. A. Elliott, N. T. M. Wilsmore.
- Taylor, Archie**, British. c/o Messrs. W. J. Brookes & Sons, Ltd., Skerton Road, Old Trafford. Analytical and Chief Chemist with Messrs. W. J. Brookes, food manufacturers.
Signed by : F. T. Winfield, A. F. H. Ward, R. F. Garwood.
- *Wilkins, Cuthbert John**, M.Sc. (N.Z.), British. 22, Prince's Square, Bayswater, W.2. Chemistry Research Student at Imperial College, S.W.7.
Signed by : H. J. Emeléus, Kenneth Stewart, A. G. Maddock.

* Reduced Annual Subscription.

UNDER SPECIAL PROVISIONS APPERTAINING TO CANDIDATES RESIDENT ABROAD :

Huber, Wolfgang, Ph.D. (Göttingen), German. 96 South Main Avenue, Albany, N.Y.
Research Chemist with the Winthrop Chemical Co., Rensselaer, N.Y.

Signed by : Adolf Windaus.

McGrath, Joseph Sarto, Reverend Professor, C.S.C., Ph.D. (Notre Dame), American.
University of Portland, Portland, Oregon. Head of Chemistry Department and
Chairman of the Science Division.

Signed by : H. B. Fröning and Samuel Glasstone.

Tourky, Ahmed Riad, Ph.D. (Munich), Egyptian. 14, Rue Zifta, Heliopolis, Cairo.
Senior Lecturer in Inorganic Chemistry, Faculty of Science, Fouad I University,
Abbassia.

Signed by : Alexander Schönberg and G. Soliman.

PAPERS RECEIVED

List of papers received between February 20th and March 26th, 1940. (This list does not include the titles of papers which have been read at a Scientific Meeting or which have appeared in the *Journal*.)

- "8-Hydroxyquinoline as a reagent for the determination of magnesium, especially in carbonate and silicate rocks." By C. C. MILLER and I. C. MCLENNAN.
- "The sensitisation of the hydrogen-oxygen reaction by nitrous oxide." By C. J. DANBY and C. N. HINSHELWOOD.
- "Solubilities of the chlorides of lanthanum, praseodymium, and neodymium; new hydrates." By J. N. FRIEND and R. W. HALE.
- "Observations on the condensation products from 'α-terpinene' and the carenes with maleic anhydride." By N. F. GOODWAY and T. F. WEST.
- "Lupanetriol and its oxidation." By E. R. H. JONES and R. J. MEAKINS.
- "Relationship between the energy absorbed at the maximum of absorption and the atomic structure." By G. BREUER.
- "Miro resin. Part II. The resin acids." By C. W. BRANDT and L. G. NEUBAUER.
- "The interaction of aryl hydrazines and halogenated aldehydes." By H. IRVING.
- "3 : 4'-Dinitrodiphenyl—a correction." By W. A. WATERS.
- "The decomposition of chlorosulphinic esters." By M. P. BALFE and J. KENYON.
- "The fungi. Part I. The triterpene acids of *Polyporus betulinus* Fr." By L. C. CROSS, C. G. ELIOT, I. M. HEILBRON, and E. R. H. JONES.
- "Studies in the sterol group. Part XL. The bromination of 7-ketocholesteryl acetate." By H. JACKSON and E. R. H. JONES.
- "Sapogenins. Part VII. The structure of quillaic acid and its relation to echinocystic acid." By D. F. ELLIOTT, G. A. R. KON, and H. R. SOPER.
- "Sapogenins. Part VIII. The sapogenin of Fuller's herb." By G. A. R. KON and H. R. SOPER.
- "The constitution of complex metallic salts. Part XI. The structure of the tertiary phosphine and arsine derivatives of cadmium and mercuric halides." By R. C. EVANS, F. G. MANN, H. S. PEISER, and D. PURDIE.
- "The constitution of complex metallic salts. Part XII. Bridged compounds containing two different metallic atoms." By F. G. MANN and D. PURDIE.
- "Compounds related to the natural oestrogens: γ-cyclopentyl-δ-(4-hydroxyphenyl)-Δ²-hexene, γ-(2-methylcyclopentyl)-δ-(4-hydroxyphenyl)-Δ²-hexene." By HUANG-MINLON.
- "The potentiometric estimation of hydroxylamine and hydrazine in alkaline solution." By H. T. S. BRITTON and (MISS) M. KÖNIGSTEIN.

- “The condensation of 3-chlorophthalic anhydride with tetrahydronaphthalene.” By N. R. CAMPBELL.
- “The resolution of methyl- β -naphthyl carbinol.” By T. A. COLLYER and J. KENYON.
- “The production of polycyclic aromatic types through the *cyclodehydration* of unsaturated ketones.” By W. S. RAPSON and R. G. SHUTTLEWORTH.

ADDITIONS TO THE LIBRARY

I. *Donations.*

BULANKIN, I. N. Principles of senescence of gelatine sols and jellies. Materials on senescence of biocolloids. Kharkov 1939. pp. 103. ill. [In Russian.] (*Recd.* 1/3/40.)
From the Kharkov State University.

FEARON, WILLIAM ROBERT. An introduction to biochemistry. 2nd edition. London 1940. pp. xii + 475. ill. 17s. 6d. net. (*Recd.* 7/3/40.)
From the Publishers: Messrs. William Heinemann (Medical Books).

HARD, ALEXANDER. The story of rayon. London 1939. pp. viii + 83. (*Recd.* 23/2/40.)
From the Author.

LYNCH, G. ROCHE, and PRYCE, D. M. Toxicology. I. Homicidal, suicidal, and accidental poisoning. (From the *British Encyclopaedia of Medical Practice*, 1939, 12.) pp. [68]. (*Reference.*)
From Dr. G. Roche Lynch, O.B.E.

MOTT, R. A., and WHEELER, R. V. The quality of coke: being the 2nd report of the Midland Coke Research Committee, Iron and Steel Industrial Research Council. London 1939. pp. xxxvi + 464. ill. 36s. net. (*Recd.* 19/2/40.)
From Dr. R. Lessing.

II. *By Purchase.*

HEATON, NOËL. Outlines of paint technology. 2nd edition. London 1940. pp. x + 413. ill. 25s. net. (*Recd.* 19/2/40.)

HERZBERG, GERHARD. Molecular spectra and molecular structure. I. Diatomic molecules. Translated . . . by J. W. T. SPINKS. New York 1939. pp. xxx + 592. ill. \$6.50. (*Recd.* 6/3/40.)

IMPERIAL BUREAU OF HORTICULTURE AND PLANTATION CROPS. Technical Communication No. 11. Fruit juices and related products. By V. L. S. CHARLEY and T. H. J. HARRISON. East Malling 1939. pp. 104. ill. 5s. net. (*Recd.* 19/2/40.)

ROBERTS, J. K. Some problems in adsorption. Cambridge 1939. pp. x + 120. ill. 7s. 6d. net. (*Recd.* 19/2/40.)

SAGE, BRUCE H., and LACEY, WILLIAM N. Volumetric and phase behaviour of hydrocarbons. Stanford University 1939. pp. xii + 299. ill. \$5. (*Recd.* 19/2/40.)

SHOHL, ALFRED T. Mineral metabolism. (American Chemical Society Monograph Series.) New York 1939. pp. x + 384. ill. \$5. (*Recd.* 8/3/40.)

III. *Pamphlets.*

WILMINK, GERARD FREDERIK. Inwerking van cyclohexylamine op aromatische halogeennitroverbindingen. Leiden 1940. pp. vi + 167.

April 1940

THE CHEMICAL SOCIETY

NOTICE OF FORTHCOMING MEETINGS

MEETING IN LONDON.

Thursday, May 16th, 1940, at 6 p.m.

Seventh Pedler Lecture, entitled "Recent Developments in the Chemistry of Carbohydrates," by Professor W. N. HAWORTH, D.Sc., F.R.S., Nobel Laureate, will be held in the **Lecture Theatre of the Institution of Mechanical Engineers**, Storey's Gate, Westminster, S.W. 1.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

ANNIVERSARY MEETINGS.

The Anniversary Meetings of the Society were held in London on April 4th, 1940, and a full report of the Ninety-Ninth Annual General Meeting appears in the *Journal* for April.

Minutes of a SCIENTIFIC MEETING

held at Burlington House, London, W. 1, on Thursday, April 4th, 1940, at 5 p.m.

The PRESIDENT, SIR ROBERT ROBINSON, M.A., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the visitors present.

After a brief introduction, the PRESIDENT called on Professor E. K. Rideal to deliver the Sørensen Memorial Lecture.

At the conclusion of the lecture, a vote of thanks to the Lecturer was proposed by Professor F. G. Donnan, seconded by Professor J. L. Simonsen, and carried with acclamation.

Minutes of a SCIENTIFIC MEETING

held at Burlington House, London, W. 1, on Thursday, April 18th, 1940, at 6 p.m.

The PRESIDENT, SIR ROBERT ROBINSON, M.A., D.Sc., LL.D., F.R.S., was in the Chair, and welcomed the visitors present.

The minutes of the Scientific Meeting on February 15th, 1940, 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.
Maurice Blood	1896	March 31st, 1940.
William Duncan	1891	May 15th, 1939.
Charles E. L. Livesey	1903	March, 1940.
Arthur Pinkerton	1919	Nov. 16th, 1939.
Luther R. Scammell	1885	April 8th, 1940.
George Baty Scott	1925	July 14th, 1939.
Angus Smith	1888	March 5th, 1940.
John I. Watts	1878	Feb. 3rd, 1939.

FORMAL ADMISSION OF FELLOWS.

The following were formally admitted Fellows of the Chemical Society: E. Gurr, G. P. Armstrong, J. Harvey, G. D. Coumoulos, G. E. F. Breuer, J. Dagley, and Thomas W. Howard.

After a brief introduction, the PRESIDENT called on Professor R. G. W. Norrish to deliver his lecture entitled "Some Aspects of the Polymerisation of Vinyl Compounds."

At the conclusion of the lecture, there was a short discussion in which the President, Mr. W. H. Cadman, Professor H. W. Melville, Dr. A. R. J. P. Ubbelohde, and Dr. G. S. Whitby took part. A vote of thanks to the Lecturer was then moved from the Chair and carried with acclamation.

OFFICIAL ANNOUNCEMENTS.**CONGRATULATIONS.**

The PRESIDENT has conveyed the congratulations of the Council to the following Fellows who have completed 60 and 50 years of Fellowship :

60 years.

	Elected.
William Macnab	Feb. 19, 1880.
Alexander Kenneth Miller	do.
Christopher Colborne Graham	April 15th, 1880.
Harold Humboldt Slater	do.

50 years.

Robert Frederick Blake	March 6th, 1890.
William Burton	do.
Frank Gossling	do.
John Scott Lumsden	do.
Charles Ridgeway Beck	April 17th, 1890.
Harold Picton	do.

and to Sir Harold Carpenter on his receiving the award of the Honda Prize of the Japan Metallurgical Society.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Professor R. Robison and Mr. F. C. Smith for contributions to the Publications Fund, and to Dr. A. F. Campbell and Mr. G. Kaufman for presenting numbers of the publications of the Society.

LOCAL REPRESENTATIVE FOR CAMBRIDGE.

Dr. E. A. Moelwyn-Hughes has agreed to act temporarily as Local Representative for Cambridge during the absence of Dr. F. B. Kipping.

TILDEN LECTURES.

Professor H. W. Melville and Professor A. R. Todd have accepted the invitation of the Council to give the Tilden Lectures during next Session.

PREVENTION OF DISCLOSURE OF UNAUTHORISED INFORMATION AT SCIENTIFIC MEETING.

The Council have received a communication from the Director of the Press and Censorship Bureau calling attention to the necessity for taking steps to prevent the unauthorised disclosure of confidential matters which may be the subject of discussion at Scientific Meetings of the Society. The Council have decided that every Visitor introduced by a Fellow should be required to sign the following undertaking appearing in the Visitors Book :

" I undertake to regard the proceedings of this meeting as confidential, and will not make, or aid in, any publication of the matters discussed without the authority of the Council,"

and would remind Fellows that the proceedings of all meetings of the Society are confidential.

FELLOWS ON ACTIVE SERVICE.

Fellows who are on active service with the Navy, Army, and Air Force are requested to notify the General Secretary of the Society, giving such particulars as may be permissible, as to their rank, unit, etc.

FELLOWSHIP.

The resignations of 22 Fellows have been accepted, the name of 1 Fellow has been removed for non-payment of annual subscriptions, and the following 31 candidates have been elected Fellows :

On April 4th.

Reginald Robert Bennett.
George Eugene Francis Breuer.
Ishbel Grace MacNaughton Campbell.
Norman Robert Campbell.
Reginald Frank Cane.
George Demetrius Coumoulos.
Jack Dagley.

Francisco Giral.
Edward Gurr.
Reginald John Meakins.
Norman Henry Pizer.
Raymond Varian Wadsworth.
Alan Hugh Williams.
Winifred Grace Wright.

On April 18th.

John Harold Chapman.
Maurice Edward Hugh Fitzgerald.
John Herbert Green.
Eleanor Mary Armine Harvey.
Frederick George Holliman.
Huang-Minlon.
Denis Oswald Jordan.
Donald Robert Lyon.
Joseph Sarto McGrath.

Keith McLaren.
Donald Routledge.
Charles George Six.
Gilbert Joseph Stacey.
Frederick William Steel.
Archie Taylor.
Ahmed Riad Tourky.
Cuthbert John Wilkins.

GENERAL ANNOUNCEMENT

BOARD OF TRADE.

The Treasury have made an Order under Section 10 (5) of the Finance Act, 1926, continuing the exemption from Key Industry duty of the articles specified below until June 30th, 1940.

Copies of the Treasury Order, which is entitled the Safeguarding of Industries (Exemption) No. 5 Order, 1940, may be obtained from H.M. Stationery Office.

Synthetic organic chemicals, analytical reagents, other fine chemicals and chemicals manufactured by fermentation processes, the following :

Barbitone (Veronal; Malonal; Malourea; acid diethyl-barbituric; diethylmalonyl-urca; Hypnogen; Deba).
Glycol ethers.

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 Tuesday, May 14th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

***Allenby, Wilfrid Ernest**, B.Sc. (Leeds), British. 107, Holgate Road, York. University Research Student.

Signed by : J. W. Baker, W. A. Wightman, H. Burton.

Auerbach, Herbert, Dr.Ing. (Berlin), German (recognised by English Tribunal as friendly alien). 46, Northways, N.W. 3. Adviser for Chemical Industry.

Signed by : Ewart Mather, J. A. Gardner, W. D. Scott.

Brock, Raymond Barrington, B.Sc. (Lond.), F.R.P.S., British. Crabwood, Oxted. Director and General Manager, Messrs. Townson and Mercer, Ltd., E.C. 3.

Signed by : H. J. Emeléus, B. Arthur Hems, B. K. Blount, F. A. Robinson.

Carroll, Michael Francis, M.Sc. (Lond.), British. 49, Forest Drive East, E. 11. Research Chemist.

Signed by : Thos. H. Durrans, Denis C. Quin, W. J. Grant.

Elliott, Thomas Harold, Ph.C., M.P.S., British. 23, South Road Back, Southall. Pharmacist.

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

* Reduced annual subscription.

Fuller, Cedric, B.Sc.Hons. (Lond.), A.I.C., British. 12A, Louis Street, Hull. Science Master at Bootham School.

Signed by : F. G. Tryhorn, S. J. Gregg, J. W. Baker.

***Marlow, Arthur Maurice**, B.Sc. (Wales), British. The Sanatorium, Talgarth. Research experience.

Signed by : J. L. Simonsen, W. Rogie Angus, G. R. Ramage.

***Pearman, John Peter Thomas**, British. 56, Clifton Park Road, Clifton, Bristol, 8. Student reading for Part II of Natural Sciences Tripos in Organic Chemistry at Sidney Sussex College, Cambridge.

Signed by : W. C. Badcock, H. McCombie, David James Bell.

***Taylor, Duncan**, B.Sc.Hons. (Edin.), British. 123, Queensferry Road, Rosyth. Carnegie Research Student for degree of Ph.D. at University of Edinburgh.

Signed by : James Kendall, Mowbray Ritchie, H. Gordon Rule, Neil Campbell, E. G. V. Percival.

UNDER SPECIAL PROVISIONS APPERTAINING TO CANDIDATES RESIDENT ABROAD :

Bradshaw, Sidney Basil, M.P.S., British. 9529 Bell Avenue, Beverley Hills, Chicago. General Manager of the Armour Laboratories, Chicago.

Signed by : C. E. Corfield.

* Reduced annual subscription.

RESEARCH GRANTS.

The Council have made the following grants from the Research Fund :

		£	s.	d.
H. Campbell (University, Cambridge).	" Studies on the adsorption of gases on clean metal surfaces by the method of contact potentials."	5	0	0
D. D. Eley (University, Cambridge).	" The catalysis of the <i>para</i> -hydrogen conversion by clean tungsten filaments."	5	0	0
W. H. Linnell (College of the Pharmaceutical Society, London).	" (a) Synthetic iodo compounds with thyroid activity. (b) Synthesis of compounds reflecting portions of the Vit. D molecule."	10	0	0
G. R. Ramage (Univ. Coll. of N. Wales, Bangor).	" Sulphur and arsenic derivatives of aromatic amines."	10	0	0
A. Wassermann (Imperial Coll.)	" Catalysis by heavy metal sulphides."	20	0	0
		<u>£50</u>	<u>0</u>	<u>0</u>

PAPERS RECEIVED

List of papers received between March 26th and April 24th, 1940. (This list does not include the titles of papers which have appeared in the *Journal*.)

"Cannabis indica. Part II. Isolation of cannabidiol from Egyptian hashish. Observations on the structure of cannabiniol." By (Miss) A. JACOB and A. R. TODD.

"Sarcostin. Part I. A preliminary study of its behaviour with reagents." By J. W. CORNFORTH and J. C. EARL.

"Kinetics of the catalysed polymerisation of styrene. Part III. On the mechanism of metal chloride catalysis." By G. WILLIAMS.

"Electrometric studies of the precipitation of hydroxides. Part XIII. The amphoteric nature of vanadium tetroxide." By H. T. S. BRITTON and G. WELFORD.

"Electrometric studies of the precipitation of hydroxides. Part XIV. Vanadous hydroxide. The nature of vanadous chloride and sulphate solutions." By H. T. S. BRITTON and G. WELFORD.

- "Some N^4 -diethylaminoalkyl- N^1 -dialkylsulphanilamides and related compounds." By J. WALKER.
- "Physicochemical studies of complex acids. Part XIV. Vanadic acid." By H. T. S. BRITTON and G. WELFORD.
- "Additions of allyl alcohols to the active methylene group. Part I. The action of acetoacetic ester on linalool and geraniol." By M. F. CARROLL.
- "The interconversion of isomeric hexoses by simple optical inversions." By W. E. TETLOW and (the late) G. J. ROBERTSON.
- "Dissociation constants, activation energies, and resonance." By H. O. JENKINS.
- "The acetylation of *d*- ψ -ephedrine and *l*-ephedrine." By W. MITCHELL.
- "The minor alkaloids of *Dubosia myoporoides*. Part III. Valeroidine." By W. F. MARTIN and W. MITCHELL.
- "Preparation of thiophen derivatives. Part II." By N. K. CHAKRABARTY and S. K. MITRA.
- "The coefficients of thermal expansion of certain solutions." By R. WRIGHT.
- "The determination of the thermodynamic dissociation constants of dibasic acids." By J. C. SPEAKMAN.
- "Dehydrogenation. Part II. The elimination and migration of methyl groups from quaternary carbon atoms during catalytic dehydrogenation." By R. P. LINSTEAD and S. L. S. THOMAS.
- "Dehydrogenation. Part III. The formation of naphthols from alcohols and ketones of the hydronaphthalene group." By R. P. LINSTEAD and K. O. A. MICHAELIS.
- "Dehydrogenation. Part IV. Catalytic disproportionation and dehydrogenation of some terpenes and terpene ketones." By R. P. LINSTEAD, K. O. A. MICHAELIS, and S. L. S. THOMAS.
- "Fused carbon rings. Part XVIII. Further investigations of model substances of the sexual hormone type." By V. C. E. BURNOP and R. P. LINSTEAD.
- "Fused carbon rings. Part XIX. Experiments on the synthesis of tetracyclic compounds of the sexual hormone type." By V. C. E. BURNOP, G. H. ELLIOTT, and R. P. LINSTEAD.
- "Physicochemical studies of complex acids. Part XV. The basic nature of vanadium pentoxide." By H. T. S. BRITTON and G. WELFORD.
- "The triterpene group. Part VII. The minor triterpenoid constituents of *Manila elemi* resin." By (MISS) I. M. MORICE and J. C. E. SIMPSON.
- "Bases of which methincyanines are the quaternary salts." By (MISS) F. M. HAMER.
- "Kinetics of a diene-association under constant volume conditions." By D. M. NEWITT and A. WASSERMANN.
- "Experiments in the glutamic acid series." By C. R. HARRINGTON and R. C. G. MOGGRIDGE.
- "Studies on hydrogen cyanide. Part XII. The asymmetry of the tetrapolymer of hydrogen cyanide." By L. E. HINKEL and T. I. WATKINS.
- "The interaction of *n*-butyl alcohol and the chlorides and oxychloride of phosphorus in the absence or in the presence of pyridine." By W. GERRARD.
- "Mechanism of elimination reactions. Part V. Kinetics of olefin elimination from ethyl, isopropyl, *tert*-butyl, and α - and β -phenylethyl bromides in acidic and alcoholic solution. Effects due to, and factors influencing, the two mechanisms of elimination." By E. D. HUGHES, C. K. INGOLD, S. MASTERMAN, and B. J. McNULTY.
- "Mechanism of substitution at a saturated carbon atom. Part XI. Hydrolysis of *tert*-butyl chloride in acidic moist acetone." By L. C. BATEMAN, K. A. COOPER, and E. D. HUGHES.
- "Mechanism of substitution at a saturated carbon atom. Part XII. Hydrolysis of benzhydryl chloride in acidic moist acetone." By M. G. CHURCH and E. D. HUGHES.
- "Mechanism of substitution at a saturated carbon atom. Part XIII. Mechanisms operative in the hydrolysis of methyl, ethyl, *isopropyl*, and *tert*-butyl bromides in aqueous solutions." By L. C. BATEMAN, K. A. COOPER, E. D. HUGHES, and C. K. INGOLD.

- “Mechanism of substitution at a saturated carbon atom. Part XIV. Unimolecular substitutions of *tert.*-butyl chloride with water, and with anions, as substituting agents in formic acid solution.” By L. C. BATEMAN and E. D. HUGHES.
- “Mechanism of substitution at a saturated carbon atom. Part XV. Unimolecular and bimolecular substitutions of *n*-butyl bromide with water, and with anions, as substituting agents in formic acid solution.” By L. C. BATEMAN and E. D. HUGHES.
- “Mechanism of substitution at a saturated carbon atom. Part XVI. Hydrolysis of methyl, ethyl, *isopropyl* and *tert.*-butyl bromides in acidic solutions under conditions believed to be conducive to uniformity of mechanism.” By L. C. BATEMAN and E. D. HUGHES.
- “Mechanism of substitution at a saturated carbon atom. Part XVII. Polar effects in alkyl groups, as illustrated by solvolytic substitutions of *p*-alkylbenzhydryl chlorides.” By E. D. HUGHES, C. K. INGOLD, and N. A. TAHER.
- “Mechanism of substitution at a saturated carbon atom. Part XVIII. Polar effect of the carboxylate-ion group as illustrated by the hydrolysis of the bromomalonate and α -bromomethylmalonate ions.” By E. D. HUGHES and N. A. TAHER.
- “Mechanism of substitution at a saturated carbon atom. Part XIX. A kinetic demonstration of the unimolecular solvolysis of alkyl halides. (Section A.) Kinetics of, and salt effects in, the hydrolysis of *tert.*-butyl bromide in aqueous acetone.” By L. C. BATEMAN, E. D. HUGHES, and C. K. INGOLD.
- “Mechanism of substitution at a saturated carbon atom. Part XX. A kinetic demonstration of the unimolecular solvolysis of alkyl halides. (Section B.) Kinetics of, and salt effects in, the hydrolysis of benzhydryl halides in aqueous acetone.” By M. G. CHURCH, E. D. HUGHES, and C. K. INGOLD.
- “Mechanism of substitution at a saturated carbon atom. Part XXI. A kinetic demonstration of the unimolecular solvolysis of alkyl halides. (Section C.) Kinetics of, and salt effects in, the hydrolysis of *p*-monoalkylbenzhydryl halides in aqueous acetone.” By M. G. CHURCH, E. D. HUGHES, C. K. INGOLD, and N. A. TAHER.
- “Mechanism of substitution at a saturated carbon atom. Part XXII. A kinetic demonstration of the unimolecular solvolysis of alkyl halides. (Section D.) Kinetics of, and salt effects in, the hydrolysis of *pp'*-dimethylbenzhydryl chloride in aqueous acetone.” By L. C. BATEMAN, E. D. HUGHES, and C. K. INGOLD.
- “Mechanism of substitution at a saturated carbon atom. Part XXIII. A kinetic demonstration of the unimolecular solvolysis of alkyl halides. (Section E.) A general discussion.” By L. C. BATEMAN, M. G. CHURCH, E. D. HUGHES, C. K. INGOLD, and N. A. TAHER.
- “Mechanism of substitution at a saturated carbon atom. Part XXIV. Qualitative survey of nucleophilic substitutions of benzhydryl halides in sulphur dioxide solution.” By L. C. BATEMAN, E. D. HUGHES, and C. K. INGOLD.
- “Mechanism of substitution at a saturated carbon atom. Part XXV. Unimolecular halogen exchange between an alkyl halide and halide ions in sulphur dioxide solution; and a concluding note.” By L. C. BATEMAN, E. D. HUGHES, and C. K. INGOLD.
- “The structure of aromatic compounds. Part III. The action of acetyl chloride on α - and β -naphthylmethylmagnesium halides.” By N. CAMPBELL, W. ANDERSON, and J. GILMORE.
- “Synthesis of lipophilic chemotherapeutics. Part IV. *n*-Acylated arsanilic acids.” By E. BERGMANN, L. HASKELBERG, and F. BERGMANN.
- “The condensation of naphthols and anthrone with bases of the ‘Mannich’ type.” By R. MICHAELIS.
- “Sapogenins. Part IX. The occurrence and constitution of bassic acid.” By B. J. HEYWOOD and G. A. R. KON.
- “The constitution of yeast ribonucleic acid. Part IV. Syntheses of uridylic and guanylic acids, uridine-5-phosphate and guanosine-5-phosphate.” By J. M. GULLAND and G. I. HOBDAV.
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ADDITIONS TO THE LIBRARY.

I. *Donations.*

BRITISH PLASTICS YEAR BOOK, 1940. London 1940. pp. 462. ill. (*Reference.*) 15s. net. From the Publishers: Plastics Press.

BRUN, E., and JOCKEY, E. Cours de chimie générale à l'usage des élèves de mathématiques spéciales. Paris 1940. pp. vi + 243. ill. *Fr.* 65 + 18%. (*Recd.* 12/4/40.)

From the Publishers: MM. Gauthier-Villars.

CARTIERE BURGO. The experimental laboratory of the Cartiere Burgo. Torino 1939. pp. 16 + 35 plates. (*Reference.*)

From the Director.

CONWAY, EDWARD J. Micro-diffusion analysis and volumetric error. London 1939. pp. xiv + 306. ill. 25s. net. (*Recd.* 19/3/40.)

From the Author.

HUDSON, J. C. The corrosion of iron and steel: being a general account of the work of the Corrosion Committee of the Iron and Steel Institute and the British Iron and Steel Federation. London 1940. pp. xvi + 319. ill. 18s. net. (*Recd.* 11/4/40.)

From Mr. E. C. Evans.

MANN, FREDERICK GEORGE, and SAUNDERS, BERNARD CHARLES. Practical organic chemistry. 2nd edition. London 1938. pp. xiv + 418. ill. 8s. 6d. net. (*Recd.* 4/4/40.)

——— Introduction to practical organic chemistry. London 1939. pp. x + 191. ill. 4s. 6d. (*Recd.* 4/4/40.) From the Authors.

II. *By purchase.*

BELL, [SIR WILLIAM JAMES]. Sale of food and drugs. 10th edition. By R. A. ROBINSON and ROBERT IVES. London 1939. pp. xxviii + 363 + 42. 15s. net. (*Recd.* 18/4/40.)

BURKE, A. D. Practical manufacture of cultured milks and kindred products. Milwaukee 1938. pp. xvi + 195. ill. 14s. net. (*Recd.* 2/4/40.)

EVANS, JOHN W., and DAVIES, GEORGE M. Elementary crystallography. 2nd edition. London 1940. pp. viii + 149. ill. 6s. 6d. net. (*Recd.* 18/4/40.)

HOUWINK, R. [Editor.] Chemie und Technologie der Kunststoffe. Leipzig 1939. pp. xvi + 625. ill. *M.* 42.40. (*Recd.* 3/4/40.)

JAMES, G. V. Water treatment . . . for all purposes and effluents purification. London 1940. pp. xii + 224. ill. 30s. net. (*Recd.* 18/4/40.)

SIMONDS, HERBERT R. Industrial plastics. London 1940. pp. xii + 371. ill. 22s. 6d. net. (*Recd.* 18/4/40.)

SNELL, FOSTER DEE, and SNELL, CORNELIA T. Chemicals of commerce. New York 1939. pp. viii + 542. (*Reference.*) \$5.

TURNER, WAYNE I., and HENRY, VICTOR M. Growing plants in nutrient solutions, or scientifically controlled growth. New York 1939. pp. xiv + 154. ill. \$5. (*Recd.* 12/4/40.)

UNITED STATES. *Department of Commerce.* Trade promotion series. No. 195. World chemical developments in 1938. By C. C. CONCANNON and A. H. SWIFT. Washington 1939. pp. viii + 205. (*Reference.*) 25c.

VOLMER, MAX. Kinetik der Phasenbildung. Dresden 1939. pp. xii + 220. ill. *M.* 19. (*Recd.* 28/3/40.)

III. *Pamphlets.*

ASSOCIATION OF AMERICAN SOAP AND GLYCERINE PRODUCERS. Glycerine and its derivatives. 2nd edition. Chicago 1940. pp. 28. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Lecture on a century of chemistry: "From Boyle to Priestley." Compiled by RICHARD B. PILCHER. London 1940. pp. 43. ill.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

OFFICIAL ANNOUNCEMENTS

DEATHS.

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

	Elected.	Died.
Charles Slater	1879	15th March, 1940.
Thomas Williams	1872	10th April, 1940.

CONGRATULATIONS.

The President has conveyed the congratulations of the Council to Mr. J. Kear Colwell who completed 50 years of Fellowship on the 15th May.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Messrs. André Bracher and H. E. Brothers for presenting numbers of the publications of the Society.

COMMITTEES.

The Council have conveyed their thanks to the retiring members of Committees for the services they have rendered to the Society.

The following Committees have been appointed for 1940-1941 :

Finance and General Purposes Committee.

F. H. Carr, H. J. T. Ellingham, I. M. Heilbron, C. N. Hinshelwood, C. K. Ingold, R. G. W. Norrish, J. C. Philip, R. E. Slade, 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, A. J. Allmand, W. Baker, R. P. Bell, 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, R. D. Haworth, I. M. Heilbron, E. D. Hughes, H. King, G. A. R. Kon, W. H. Mills, R. A. Morton, J. R. Partington, A. Robertson, J. M. Robertson, R. Robison, N. V. Sidgwick, H. Terrey, and A. R. Todd, together with the Officers, and the Editor as Secretary.

Research Fund Committee.

W. E. Garner, I. M. Heilbron, 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, together with a member nominated by the Bureau.

FELLOWS ON ACTIVE SERVICE.

Fellows who are on active service with the Navy, Army, and Air Force are requested to notify the General Secretary of the Society, giving such particulars as may be permissible, as to their rank, unit, etc.

FELLOWSHIP.

The resignations of 12 Fellows were accepted; 3 Fellows were reinstated, and the following 9 new Fellows were elected on the 16th May:

Wilfrid Ernest Allenby.
Sidney Basil Bradshaw.
Raymond Barrington Brock.
Michael Francis Carroll.
Thomas Harold Elliott.

Cedric Fuller.
Arthur Maurice Marlow.
John Peter Thomas Pearman.
Duncan Taylor.

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 17th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

Borthwick, James Leonard, A.I.C., British. 86, Temple Park Crescent, Edinburgh, 11. Works Chemist to North British Rubber Co., Ltd.

Signed by : G. F. Marrian, A. F. Graham, Edgar Stedman.

***Butement, Francis Dudley Stewart**, B.Sc. (Lond.), A.I.C., British. 4, West Park, S.E. 9. Junior Scientific Officer, Research Department, Royal Arsenal.

Signed by : J. S. Dick, W. W. Jones, Arthur I. Vogel.

***Crawford, Thomas Blackie Beveridge**, B.Sc.Hons. (Edin.), British. 134, Greenbank Road, Edinburgh, 10. Carnegie Research Scholar in Medical Chemistry Department of University of Edinburgh.

Signed by : G. F. Marrian, C. P. Stewart, A. F. Graham.

***Gent, William Laurence Greenwood**, B.Sc.Hons. (Lond.), British. 43, Effingham Road, Bristol, 6. Research Student at King's College, London.

Signed by : G. M. Bennett, Gwyn Williams, E. W. McClelland.

***Glasson, Basil Wharton**, British. 3, Surbiton Hill Park, Surbiton. Student at Oxford University.

Signed by : D. Ll. Hammick, Ronald P. Bell, H. M. Powell.

***King, David Wylie**, B.Sc. (Lond.), British, 79, Marlborough Mansions, N.W. 6. Assistant Chemist to Macleans, Ltd., Brentford.

Signed by : Henry Terrey, J. N. E. Day, E. D. Hughes.

***King, Nicholas Kelso**, B.Sc. (Sydney), British. c/o Bank of New South Wales, 47, Berkeley Square, W. 1. Student at Dyson Perrins Laboratory, Oxford.

Signed by : Robert Robinson, S. G. P. Plant, J. C. Smith.

***Lodge, Reginald Montague**, B.A. and B.Sc. (Oxon.), British. 31, Davenant Road, Oxford. Research Chemist.

Signed by : Ronald P. Bell, C. N. Hinshelwood, J. H. Wolfenden.

Rigby, William, B.Sc.Hons. (Lond.), Ph.C., A.I.C. British. College of the Pharmaceutical Society, c/o University College, Cathays Park, Cardiff. Demonstrator and Research Student.

Signed by : Wilfred H. Linnell, Frank Hartley, David T. Lewis.

Smith, Robert Lewis, B.Sc.Hons. (Edin.), A.I.C., British. 24, Town Lane, Bebington. Research Chemist with Messrs. Lever Brothers and Unilever, Ltd.

Signed by : Duncan Bruce, Mowbray Ritchie, E. G. V. Percival.

***Stannett, Vivian Thomas**, A.I.C., British. Berry House, Stoke Poges. Works Chemist, British Celanese, Ltd., Spondon.

Signed by : John C. Roberts, J. Masson Gulland, D. O. Jordan.

***Storey, Ian David Edward**, B.Sc.Hons. (Edin.), British. Royal Observatory, Edinburgh. Carnegie Research Scholar in Medical Chemistry Department of Edinburgh University.

Signed by : G. F. Marrian, R. Michaelis, A. F. Graham.

* Reduced Annual Subscription.

***Sullivan, Kathleen Winifred**, B.Sc. (Lond.), British. 11, Hazelwood Road, Northampton. Student at King's College, London.

Signed by : G. M. Bennett, E. W. McClelland, C. S. Salmon.

***Thomas, John Kendall**, B.A. (Oxon.), British. Balliol College, Oxford. Demonstrator in Physical Chemistry at Balliol and Trinity Colleges.

Signed by : Richard Barrow, D. H. Everett, Ronald P. Bell.

Turner, Arthur James, M.A. (Cantab.), D.Sc. (Lond.), British. Linen Industry Research Association, The Research Institute, Lambeg, Lisburn, Co. Antrim. Director of Research.

Signed by : Arthur Geake, J. C. Withers, R. G. Fargher.

***Turner, Harold Silas**, Inter.B.Sc. (Lond.), British. 87, Wilsthorpe Road, Long Eaton. Studying for B.Sc. degree.

Signed by : J. M. Connolly, G. Malcolm Dyson, C. Whitworth.

Wilson, Robert Douglas, Inter.B.Sc. (Lond.), British. 22, Ormidale Terrace, Edinburgh, 12. Chief assistant in physical laboratory of North British Rubber Co.

Signed by : James Sandilands, Robert G. M. Dakers, Hugh B. Nisbet.

UNDER SPECIAL PROVISIONS APPERTAINING TO APPLICANTS RESIDENT ABROAD :

Shiple, George Joseph, A.B. and M.C. (St. Louis), D.Sc. (Fordham), U.S.A. Chemistry Department, University of Detroit, Detroit, Michigan. Professor of Chemistry and Head of Department.

Signed by : Oliver Kamm.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between April 24th and May 21st, 1940. (This list does not include the titles of papers which have appeared in the *Journal*.)

"The chemistry of the 'insoluble red' woods. Part I. Pterocarpin and homoptero-carpin." By A. MCGOOKIN, A. ROBERTSON, and W. B. WHALLEY.

"Organic derivatives of sulphur, selenium, and tellurium. Part I." By D. T. LEWIS.

"Curare alkaloids. Part V. Alkaloids of some chondrodendron species and the origin of *radix pareirae bravae*." By H. KING.

"The rotary dispersion and circular dichroism of *l*-menthyl *d*- β -chloro- β -nitrosobutyrate." By S. MITCHELL and G. K. SIMPSON.

"Sodium polyiodides." By G. H. CHEESMAN, D. R. DUNCAN, and I. W. H. HARRIS.

"Chalkones: reactions of *o*-hydroxyphenyl 6-methoxy-2:3-benzostyryl ketone and of some derivatives." By B. G. ACHARYA, R. C. SHAH, and T. S. WHEELER.

"The action of Grignard reagents on methyl *r*-tropate and on methyl atropate." By A. MCKENZIE and E. R. WINTER.

"Free radicals and radical stability. Part VIII. The stability of formates and the reduction of triarylcarbinols." By S. T. BOWDEN, D. L. CLARKE, and W. E. HARRIS.

"Free radicals and radical stability. Part IX. The influence of short-lived and long-lived radicals on the reactivity of alcohols." By S. T. BOWDEN.

"Free radicals and radical stability. Part X. The influence of the methyl group on the stability of triphenylmethyl." By S. T. BOWDEN and D. L. CLARKE.

"The carbonyl constituents of eucalyptus oils. Part III. The constitution of phellandral. *d*-, *l*-, and *dl*-(synthetic) phellandric acids." By R. G. COOKE, A. K. MACBETH, and T. B. SWANSON.

"The action of nitrous acid on tertiary amines: the influence of acidity." By G. P. CROWLEY, G. J. G. MILTON, T. H. READE, and W. M. TODD.

"Monolayers on solids." By J. K. ROBERTS.

- "The chemical nature of basic zinc carbonate." By E. S. GYNGELL and J. R. I. HEPBURN.
- "Ultra-violet absorption spectra of nitrogenous heterocycles. Part I. Effect of p_H and irradiation on the spectrum of adenine." By J. R. LOOFBOUROW, S. MIRIAM, and M. STIMSON.
- "Studies in optical superposition. Part IX. *l*-Menthyl esters of mucic and 1:2:3:4-tetrahydroxyadipic acids." By R. W. LAPSLEY, J. ROBERTSON, and T. S. PATTERSON.
- "Phthalocyanines and related compounds. Part XVII. Intermediates for the preparation of tetrabenzporphins: acids derived from phthalimidine." By R. P. LINSTEAD and G. A. ROWE.
- "Phthalocyanines and related compounds. Part XVIII. Intermediates for the preparation of tetrabenzporphins: the Thorpe reaction on phthalonitrile." By P. A. BARRETT, R. P. LINSTEAD, and (in part) J. J. LEAVITT, and G. A. ROWE.
- "Phthalocyanines and related compounds. Part XIX. Tetrabenzporphins, tetrabenzmonazaporphin and their metallic derivatives." By P. A. BARRETT, R. P. LINSTEAD, F. G. RUNDALL, and G. A. P. TUEY.
- "The Fries rearrangement of phenyl laurate and phenyl stearate." By H. E. BELL and J. E. DRIVER.
- "The influence of a solvent on the strength of the hydrogen bridge." By E. A. MOELWYN-HUGHES.

ADDITIONS TO THE LIBRARY

I. Donations.

KINGZETT, C. T. Chemical encyclopædia: a digest of chemistry and its industrial applications. 6th edition. Revised and edited by RALPH K. STRONG. London 1940. pp. x + 1088. ill. (*Reference.*) 45s. net. From the Publishers: Messrs. Baillière, Tindall & Cox.

KUNGL. SVENSKA VETENSKAPSAKADEMIEN. Förhistoria, grundläggning och första organisation. By BENGT HILDEBRAND. 2 vols. Stockholm 1939. pp. xvi + 672, vi, 673 to 885. ill. (*Reference.*) From the Academy.

ROTHAMSTED EXPERIMENTAL STATION. Library catalogue of printed books and pamphlets on agriculture published between 1471 and 1840. 2nd edition. Harpenden 1940. pp. 293. ill. (*Reference.*) 15s. net.

From Sir John Russell, O.B.E.

II. By purchase.

FINDLAY, ALEXANDER. Chemistry in the service of man. 5th edition. London 1939. pp. xx + 398. ill. 8s. 6d. net. (*Recd.* 22/4/40.)

HILDITCH, T. P. The chemical constitution of natural fats. London 1940. pp. xii + 438. 35s. net. (*Recd.* 27/4/40.)

RICE, OSCAR KNEFLER. Electronic structure and chemical binding, with special reference to inorganic chemistry. New York 1940. pp. xiv + 511. ill. \$5. (*Recd.* 15/5/40.)

SVEDBERG, THE, and PEDERSEN, KAI O. The ultracentrifuge. Oxford 1940. pp. x + 478. ill. 40s. net. (*Recd.* 22/4/40.)

III. Pamphlets.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 593—1940. General purpose laboratory thermometers. (Revised.) pp. 16.

— — — No. 611—1940. Petri dishes. (Revised.) pp. 7. ill.

— — — No. 894—1940. The determination of the flow and drop points of fats and allied substances. (Apparatus and method of use.) pp. 11. ill.

— — — No. 895—1940. Microbiological examination of butter. pp. 14.

ELWELL, WILLIAM E. [Compiler.] Pectin: its manufacture, properties and uses. [Seattle] 1939. pp. 66.

HENRIQUES, ROBERT. Der Kautschuk und seine Quellen. Dresden 1899. pp. 31 + 5 tables and 4 maps.

IMPERIAL BUREAU OF ANIMAL NUTRITION. Technical Communication No. 9. Methods for the chemical analysis of biological material in nutrition investigations. Edited by WILLIAM GODDEN. Aberdeen 1937. pp. 55. ill.

— — — Technical Communication No. 10. Table of composition of foods, giving the energy value, protein, fat, carbohydrate, calcium, phosphorus and iron content of some 300 foods commonly used in Great Britain and compiled for use in the analysis of dietary surveys. Aberdeen 1938. pp. 14.

WALLERSTEINER, K. The aldehydes in the chemotherapy of tumors. (From the *London Hospital Gazette*, 1940, 43.)

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

OFFICIAL ANNOUNCEMENTS

DEATHS.

At their meeting held on June 20th the Council learned with profound regret of the death on June 10th of their distinguished Past-President, Sir Jocelyn Thorpe, and passed the following resolution which the President has conveyed to Lady Thorpe :

The President, Council, and Fellows of the Chemical Society learned with profound sorrow at their meeting to-day of the death on June 10th, 1940, of their eminent Past-President, Sir Jocelyn Field Thorpe.

They desire to express their high appreciation of his distinguished original contributions to the Science of Chemistry and of the services he rendered to the Government and Industry. Endowed with abundant vitality, he not only carried out important researches himself, but imparted his enthusiasm to those associated with him, and has thus left a lasting memorial. They also record their great indebtedness to him for his devotion to the affairs of the Society. During the 21 years he served on the Council he filled with distinction the offices of Treasurer, Vice-President, and President. The Council remember with gratitude that to him was due the institution of the Publications Fund, which has proved invaluable to the Society, and the establishment of the Superannuation Scheme for the benefit of the Staff.

The Science of Chemistry is poorer by his death, and the Council mourn the loss of a revered colleague, who had endeared himself to all by the unfailing kindness and generosity of his nature and by his fund of humour so often directed against himself.

The Council convey their deep sympathy to Lady Thorpe in her great sorrow.

The deaths of the following Fellows were also announced :

	Elected.	Died.
Oliver Gatty	1933	June 5th, 1940.
Sir Arthur Harden	1887	June 17th, 1940.
Christopher Rawson	1880	May 30th, 1940.

and the Secretaries were directed to convey the sympathy of the Council to the relatives.

ACKNOWLEDGMENTS.

The thanks of the Council have been conveyed to Major R. B. Turbutt for sending a contribution to the Publications Fund for 1941, and to Dr. P. J. Garner and Dr. P. Szego for presenting copies of the Society's publications.

WILL OF THE LATE SIR GILBERT MORGAN.

The Council have been informed that under the Will of the late Sir Gilbert Thomas Morgan, after paying certain pecuniary bequests, the income from his residuary estate, amounting to £28,870 (net personalty), has been left to Lady Morgan for life and, at her death, on trust on certain conditions to the Chemical Society.

TILDEN LECTURES.

Professor H. W. Melville and Professor A. R. Todd have accepted the Council's invitation to give the Tilden Lectures during the session 1940-1941, and Professor Todd has chosen as the title of his lecture " Vitamins of the B Group."

SCHEME OF CO-OPERATION FOR THE THREE CHARTERED CHEMICAL BODIES.

At their meeting on June 20th the Council had under consideration a suggested agreement and an amended scheme of co-operation for the three chartered chemical bodies, and have approved the scheme subject to certain modifications. The Chemical Council has been informed accordingly, and Fellows will be advised of further developments.

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 **Friday, November 1st, 1940**. 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.

LIBRARY.

The Library will be entirely closed for cleaning from Monday, August 5th to Saturday, August 10th, inclusive. The annual revision and recall of books, however, will not take place.

FELLOWSHIP.

At the Council meeting on June 20th, the resignation of 1 Fellow was accepted; future annual subscriptions of two Fellows of 40 years' standing were remitted; the names of 20 Fellows were removed from the List of Fellows for non-payment of annual subscriptions under the action of Bye-Law 15, and the following 18 candidates were elected Fellows of the Society :

James Leonard Borthwick.
Francis Dudley Stewart Butement.
Thomas Blackie Beveridge Crawford.
William Laurence Greenwood Gent.
Basil Wharton Glasson.
David Wylie King.
Nicholas Kelso King.
Reginald Montague Lodge.
William Rigby.

George Joseph Shiple.
Robert Lewis Smith.
Vivian Thomas Stannett.
Ian David Edward Storey.
Kathleen Winifred Sullivan.
John Kendall Thomas.
Arthur James Turner.
Harold Silas Turner.
Robert Douglas Wilson

GENERAL ANNOUNCEMENT
CHEMISTS AND THE CENTRAL REGISTER.

The Ministry of Labour has recently called attention to the fact that further chemists are urgently needed by Government Departments and that it is essential that the names of all chemists of either sex, especially young chemists, who are both qualified and willing, should be included on the Register. Roughly speaking, the minimum qualification for enrolment as a chemist on the Register is a degree in chemistry or an equivalent qualification, or, on the other hand, several years' experience in chemical practice or industry.

Enrolment on the Central Register implies that the persons concerned will be prepared to accept suitable full-time employment offered to them, unless they are already engaged on work of national importance, but the volunteers themselves are the judges of the suitability of the post offered, and only the names of volunteers who have expressed their willingness to be considered for any particular post offered are submitted to the prospective

employers. Further particulars of the Central Register, and in particular of the Chemistry Sections, will be supplied on application to the Secretary, Ministry of Labour and National Service, Central Register Branch, Queen Anne's Chambers, Westminster, S.W.1, and volunteers are asked to write to that address.

There is also an immediate requirement for juniors, normally of Inter.B.Sc. standard, preferably with laboratory or factory experience, who are not qualified for enrolment on the Central Register, but are available for employment such as that of laboratory or experimental assistant, at a salary range between £130 and £260 per annum (£130 to £230 per annum in the case of women), according to qualifications and experience. Persons suitable for appointment to such posts are normally recruited from the Supplementary Register of persons with professional, technical, and business attainments, which is maintained at certain selected offices of the Ministry of Labour and National Service. Any persons willing to be considered for the junior posts referred to are invited to apply in writing for enrolment in the Supplementary Register through the most convenient Local Office of the Ministry, the address of which can be obtained at any Post Office; the application will then be forwarded to the appropriate selected office.

PAPERS RECEIVED

List of papers received between May 21st and June 25th, 1940. (This list does not include the titles of papers which have appeared in the *Journal*.)

- "Studies in the sterol-oestrone group. Part II. Some derivatives of 2-phenylcyclohexanone." By J. C. BARDHAN.
- "The constitution of arabic acid. Part V. Methylated arabic acid." By F. SMITH.
- "Rottlerin. Part VI. A spectrographic study of rottlerin and its derivatives." By R. A. MORTON and Z. SAWIRES.
- "Application of the diene synthesis to terpenoid compounds. Eucarvone and maleic anhydride." By T. F. WEST.
- "The interaction of β -ionone with halides in the presence of lithium, and a synthesis of 1:6-dimethylnaphthalene." By F. B. KIPPING and F. WILD.
- "Attempts to find new antimalarials. Part XVII. Derivatives of 5:6-pyridoquinoline." By W. O. KERMACK and (MISS) A. P. WEATHERHEAD.
- "Quadrivalent vanadium lakes of azo-dyes." By H. D. K. DREW and F. G. DUNTON.
- "The magnitude of the solvent effect in dipole moment measurements. Part III. Polarisation and association of alcohols in the liquid phase." By F. R. GOSS.
- "Chelation in the potassium compounds of carboxylic and sulphinic acids." By (MRS.) W. G. WRIGHT.
- "Studies in the composition of coal: extraction of coal with quinoline." By R. BELCHER and (the late) R. V. WHEELER.
- "The refractivity of formamide." By G. F. SMITH.
- "The stereochemistry of 3-covalent arsenic. Isomeric forms of 9:10-di-*p*-tolyl-9:10-dihydroarsanthrene." By J. CHATT and F. G. MANN.
- "The reduction of nitrosylsulphuric acid by sulphur monoxide." By C. J. WILKINS.
- "Derivatives of 1:2:3:4-tetrahydroxybenzene. Part VI. The oxidation of quinol with sodium chlorate." By W. BAKER and (MISS) I. MUNK.
- "The constitution of complex metallic salts. Part XIII. The stability of the 4-covalent auric complex." By F. G. MANN and D. PURDIE.
- "Addition of $\alpha\beta$ -unsaturated alcohols to the active methylene group. Part II. The action of ethyl acetoacetate on α - and β -cinnamyl alcohols." By M. F. CARROLL.
- "Mechanism of polymerisation. Part V. Experiments relating to the constitution of the solid dimeride and the liquid trimeride of $\beta\gamma$ -dimethylbutadiene, and to the separation of the higher polymerides." By E. H. FARMER and J. F. MARTIN.

- “Mechanism of low-molecular polymerisation. Part VI. Dimerisation of unconjugated pentadiene.” By A. AHMAD and E. H. FARMER.
- “The preparation of 2-phenyl-naphthalene from diphenyl.” By D. H. HEY and R. WILKINSON.
- “The nitrosation of phenols. Part XVIII. The synthesis of 3-fluoro-4-nitrosophenol and of 3-fluoro-6-nitrosophenol. A comparison of the stabilities of the 3-halogeno-4-nitrosophenols.” By H. H. HODGSON and D. E. NICHOLSON.
- “The structure of metanethole.” By W. M. BAKER and J. ENDERLY.
- “The constituents of natural phenolic resins. Part XVII. A synthesis of 1-matairesinol.” By R. D. HAWORTH and F. H. SLINGER.
- “Constituents of the leaves of certain leucadendron species. Part III. Oxidation of leucodrin derivatives with periodic acid and lead tetra-acetate.” By W. S. RAPSON.

ADDITIONS TO LIBRARY.

I. Donations.

BENNETT, E. F. A review of driers and drying. London 1940. pp. 90. ill. 3s. 6d. net. (*Recd.* 21/5/40.) From the Publishers: Paint Technology (Neil R. Fisk).

COMPAGNO, I. Analisi dei metalli non ferrosi di uso industriale e delle loro leghe. Milano 1939. pp. xii + 494. L. 60. (*Recd.* 12/6/40.) From Dr. C. A. Mitchell.

PRIESTLEY, JOSEPH. The history and present state of discoveries relating to vision, light, and colours. 2 vols. London 1772. pp. xiv, xvi + 422, ii, 423 to 812, xii. ill. (*Reference.*) From Dr. J. Newton Friend.

REKO, VICTOR A. Magische Gifte. Rausch- und Betäubungsmittel der neuen Welt. 2nd edition. Stuttgart 1938. pp. xii + 206. M. 6. (*Recd.* 12/6/40.) From Dr. C. A. Mitchell.

REVUE SCIENTIFIQUE. Revue rose illustrée. Year LXXVIII etc. Paris 1940 +. (*Reference.*) From the Faraday Society.

SAND, H. J. S. Electrochemistry and electrochemical analysis. Vol. II. Gravimetric electrolytic analysis and electrolytic Marsh tests. London 1940. pp. x + 149. ill. 5s. net. (*Recd.* 24/5/40.)

From the Publishers: Messrs. Blackie & Son.

II. By purchase.

BAMFORD, FRANK. Poisons: their isolation and identification. London 1940. pp. viii + 344. ill. 18s. net. (*Recd.* 20/6/40.)

DORSEY, N. ERNEST. Properties of ordinary water-substance in all its phases: water-vapor, water, and all the ices. (American Chemical Society, Monograph Series.) New

York 1940. pp. xxiv + 673. ill. \$15. (*Recd.* 20/6/40.)

FIELDING, T. J. Photo-electric and selenium cells: their operation, construction and uses. 2nd edition. London 1940. pp. viii + 163. ill. 7s. 6d. net. (*Recd.* 20/6/40.)

KEHL, GEORGE L. The principles of metallographic laboratory practice. New York 1939. pp. xii + 359. ill. \$3.50. (*Recd.* 20/6/40.)

MACK, JULIAN ELLIS, and MARTIN, MILES J. The photographic process. New York 1939. pp. xviii + 586. ill. \$5. (*Recd.* 20/6/40.)

MOTT, N. F., and GURNEY, R. W. Electronic processes in ionic crystals. Oxford 1940. pp. xii + 275. ill. 20s. net. (*Recd.* 20/6/40.)

SZENT-GYÖRGYI, ALBERT V. On oxidation, fermentation, vitamins, health and disease. Baltimore 1939. pp. xii + 109. \$2. (*Recd.* 20/6/40.)

WIGNER, J. H. Soap manufacture: the chemical processes. London 1940. pp. viii + 162. 10s. net. (*Recd.* 20/6/40.)

WILLIAMS, ROBERT S., and HOMERBERG, VICTOR O. Principles of metallography. 4th edition. New York 1939. pp. x + 339. ill. \$3.50. (*Recd.* 20/6/40.)

III. Pamphlets.

INDIAN TEA ASSOCIATION. *Tocklai Experimental Station*. Memorandum No. 6. Nitrogen supply to tea. By H. R. COOPER. Calcutta 1939. pp. iv + 135.

THAYER-OJEDA, TOMÁS. Hipotesis sobre la formacion de la materia. Santiago 1939. pp. 56.

PAGES MISSING FROM 35 TO 40

THE CHEMICAL SOCIETY

MEETINGS OUTSIDE LONDON.

EDINBURGH.

November 26th, 1940, at 6.30 p.m. **Lecture** on "The Chemical Exploration of the Stratosphere," by Professor F. A. Paneth, Ph.D. Joint Meeting with the Edinburgh University Chemical Society, the Institute of Chemistry, and the Society of Chemical Industry, to be held at Heriot-Watt College.

GLASGOW.

November 15th, 1940, at 7 p.m. **Lecture** on "The Structure of Proteins," by Dr. W. T. Astbury. To be held at the Royal Technical College.

MANCHESTER.

November 2nd, 1940, at 2.15 p.m. **Lecture** on "Coal Rank and Structure," by Professor H. L. Riley, D.Sc. Joint Meeting with the Manchester Section of the Society of Chemical Industry and other Societies. To be held in the Chemistry Lecture Theatre of the University.

NEWCASTLE AND DURHAM.

November 22nd, 1940, at 6 p.m. **Lecture** on "The Philosophy of Science," by Professor F. G. Donnan, C.B.E., D.Sc., F.R.S., at the Art School Theatre, King's College.

NOTTINGHAM.

November 14th, 1940, at 6.45 p.m. **Lecture** on "Stereochemistry and Valency Group," by Professor N. V. Sidgwick, C.B.E., D.Sc., F.R.S., before the East Midlands Section of the Institute of Chemistry at the Welbeck Hotel. The attendance of Fellows of the Society is invited.

November 28th, 1940, at 3.30 p.m. **Lecture** on "Bivalent Hydrogen: Some New Aspects of Tautomerism," by Dr. L. Hunter, M.Sc., F.I.C. Joint Meeting with the University College Physical and Chemical Society. To be held at University College, University Park.

ST. ANDREWS AND DUNDEE.

November 25th, 1940, at 4.30 p.m. **Lecture** on "The Chemical Exploration of the Stratosphere," by Professor F. A. Paneth, Ph.D. To be held in the Chemistry Lecture Theatre at University College, Dundee.

SHEFFIELD.

November 8th, 1940, at 5.30 p.m. **Lecture** on "Reactions in Monolayers," by Professor E. K. Rideal, M.B.E., M.A., D.Sc., F.R.S. Joint Meeting with the Sheffield University Chemical Society. To be held in the Chemistry Lecture Theatre of the University, Western Bank.

SOUTH WALES.

In Swansea.

November 9th, 1940, at 3 p.m. **Lecture** on "Fluorine: Some Recent Developments in the Chemistry of the Element and its Derivatives," by Dr. H. J. Emeléus. Joint Meeting with the University College of Swansea Chemical Society.

November 23rd, 1940, at 2.45 p.m. **Lecture** on "Some Aspects of Surface Action," by Professor E. K. Rideal, M.B.E., M.A., D.Sc., F.R.S. Joint Meeting with the University College of Swansea Chemical Society and the Local Section of the Institute of Chemistry.

Both lectures to be held in the Chemistry Lecture Theatre, University College, Swansea.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

MEETINGS OUTSIDE LONDON.

LECTURE AT GLASGOW, OCTOBER 14th.

A meeting of the Society, in co-operation with the Local Sections of the Institute of Chemistry and the Society of Chemical Industry, was held at 5 p.m. on Monday, October 14th, in the University, with Professor F. J. Wilson in the Chair.

Professor E. C. Dodds, M.V.O., D.Sc., delivered a lecture on "Synthetic Oestrogens." The Lecturer showed how the now historical replacement or supplementation of galenicals by synthetic drugs was being repeated with respect to the hormones of the animal organism. The isolation and chemical characterisation of the natural oestrogens led to a systematic search rewarded by the discovery of rather distantly related synthetic materials of similar or even greater potency. The pharmacology of the synthetic oestrogens was discussed, and some points in their metabolism referred to.

A discussion followed, and a vote of thanks, proposed by Professor J. W. Cook, was carried with acclamation.

LECTURE AT LEEDS, OCTOBER 14th.

A meeting of the Leeds Area Local Section was held in the General Lecture Theatre of the University of Leeds on Monday, October 14th, 1940, at 7.30 p.m. The Chair was taken by Professor F. Challenger, D.Sc., F.I.C., and Professor R. D. Haworth, D.Sc., F.I.C., delivered a lecture entitled "The Constituents of Natural Phenolic Resins." After dealing with the methods by which the various typical structures of the resinols had been determined by degradation, the lecturer illustrated how these structures had been confirmed by synthesis. He then dealt with the stereochemical aspects of the problem, and concluded with a brief discussion of the biogenetic and structural relationships of the lignan group of lignin.

A discussion followed in which the Chairman and several members took part, and the meeting concluded with a vote of thanks to the lecturer proposed by Mr. W. A. Wightman.

OFFICIAL ANNOUNCEMENTS

SCHEME OF CO-OPERATION FOR THE THREE CHARTERED CHEMICAL BODIES.

It was stated in the *Proceedings* for September that unless a substantial body of Fellows wrote by October 21st expressing disapproval of the Scheme of Co-operation for the three Chartered Chemical Bodies, it would duly come into operation, provided that similar action were taken by the other two Chartered Chemical Bodies.

The Council have heard from the Institute of Chemistry and the Society of Chemical Industry that the Scheme has been finally accepted by them. It is now evident that the Scheme also has the approval of Fellows of the Society, and it will, therefore, come into operation on January 1st, 1941. A further communication will be sent to Fellows in November.

DEATHS.

The President deeply regrets to announce the loss sustained by the Society, through death, of the following :

Honorary Fellow.

	Elected.	Died.
Sir Joseph J. Thomson, O.M., F.R.S.	1927	August 30th, 1940.

Fellows.

Nelson Alcock	1928	September, 1939.
Sir Harold Carpenter	1899	September 13th, 1940.
Albert J. B. Cooper	1898	July 26th, 1940.
Alexander C. Cumming	1910	September 28th, 1940.
Thomas S. Dick	1912	August 16th, 1940.
Charles G. Eliot	1938	July 19th, 1940.
Sir Robert Hadfield, Bt.	1916	September 30th, 1940.
Edward Haworth	1894	June 14th, 1940.
Edgar N. Langham	1891	June 21st, 1940.
Percy G. Mander	1903	July 15th, 1940.
Robert H. Parker	1882	September 14th, 1940.
William C. Reynolds	1898	March 20th, 1940.
Morris M. Stranack	1926	May 16th, 1940.
Hugh W. Thomas	1915	May 28th, 1940.
Norman T. M. Wilsmore	1892	June 12th, 1940.
Max Wyler	1933	July 22nd, 1940.

PUBLICATIONS GRANTS.

The Council have received a grant of £550 from the Government Publications Grant towards the cost of the Society's publications for 1940, and also a grant of £150 from the Chemical Council towards the cost of publishing summaries of papers in the Journal.

ACKNOWLEDGMENTS.

The Council have to acknowledge gifts of the Society's publications received from Messrs. A. C. Cumming, C. Fuller, P. J. Garner, L. M. Nash, H. E. Stevenson, N. Garrod Thomas, Mrs. O. Gatty, and Imperial Chemical Industries, Ltd., to whom their thanks have been conveyed.

FELLOWSHIP.

The resignations of 30 Fellows have been accepted and the names of 45 Fellows have been removed from the List of Fellows for non-payment of Annual Subscriptions under Bye-Law 15. 3 Fellows have been reinstated and the following 28 new Fellows have been elected :

Robert de Brath Ashworth.	Bhupendra Vallavbhai Patel.
William Atherton.	Tom Peacock.
Lionel John Bellamy.	Bernard John Frederick Ralph.
John Charles Dine.	Francis Fraser Ross.
Meredith Gwynne Evans.	Petr Pavel Ruzek.
James Joseph Gordon.	Stanley Gordon Smart.
Albert Richard Harriman.	Derrick George Harold Stone.
Gwendolen Hardy Harrison.	Hubert Henry Symonds.
Spencer David Jones.	Ernest Edward Tallis.
James Arthur Kay.	Kenneth Duncan Wadsworth.
George Edward Little.	Peter Fowler Ward.
Shantilal Hiralal Merchant.	Denis Edward Wheeler.
Charles Clifford Moss.	Paul Ivan Wilson.
Mark Frank Critchell Paige.	Richard Wilson.

GENERAL ANNOUNCEMENT

QUINQUENNIAL INDEX, 1933—1937.

The Bureau of Chemical and Physiological Abstracts hopes to issue the Names Volume of the Quinquennial Index for 1933—1937 early in December, 1940.

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, 11th November. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

***Dostrovsky, Israel**, B.Sc. (Lond.), Palestinian. Edward Davies Chemical Laboratories, Aberystwyth. Research student.

Signed by : C. K. Ingold, E. D. Hughes, Henry Terrey.

Holmes, Cedric William Nelson, B.Sc. (Glasgow), British. 26, Roman Road, Bearsden, Glasgow. Research Student at Glasgow University.

Signed by : J. D. Loudon, T. S. Patterson, T. S. Stevens.

***Kennaway, Thomas**, B.Sc., 1st Class Hons. Chemistry (Edin.), British. 29, Townhall Street, Inverkeithing, Fife. Research Student at Edinburgh University.

Signed by : James Kendall, H. Gordon Rule, Mowbray Ritchie, Christina C. Miller, T. R. Bolam, E. G. V. Percival.

***Hemming, Mabel Louie**, B.Sc. Hons. Chemistry and Ph.D. (Leeds), British. c/o Mrs. Hobson, 58, Sandygate Road, Sheffield, 10. Temporary Assistant Lecturer in Physical Chemistry at Sheffield University.

Signed by : J. W. Baker, D. A. Wightman, H. Burton.

Swallow, John Eric Langley, B.Sc. (Reading), British. 18, College Road, Maidenhead. Shortly to be employed as Chemist.

Signed by : James Starr, K. S. Fowler, W. G. S. Parker.

***Smith, John Norman**, B.Sc. Hons. in Biochemistry (Liverpool), British. 4, Huyton Lane, Huyton.

Signed by : Robert Gaddie, John V. Loach, V. J. Occleshaw.

Southern, Thomas Alan Robert, B.Sc. Special Chem. (London), British. 36, Park View, Eagley Bank, Bolton. Assistant Works Manager in a Factory in India.

Signed by : G. T. Young, E. L. Hirst, D. Routledge, T. Malkin.

Erratum. In *Proceedings* for September, page 38, for **Spencer, David Jones**, read **Jones, Spencer David**.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between September 28th and October 24th, 1940 :

“Dunnione. Part II.” By J. R. PRICE and SIR R. ROBINSON.

“Studies in the statics of solutions. Part I. Molecular interaction in polar liquids.”

By E. A. MOELWYN-HUGHES.

“Studies in the statics of solutions. Part II. Intracellular vibration frequencies of hydrated ions.” By E. A. MOELWYN-HUGHES.

“Studies in the statics of solutions. Part III. The standard electrode potential.” By E. A. MOELWYN-HUGHES.

“Chromones of the naphthalene series. Part III. Rapid quantitative transformation at room temperature of *o*-aroyloxyacetarones into *o*-hydroxydiaroylmethanes.” By V. V. ULLAL and T. S. WHEELER.

- "Studies on seed mucilages. Part I. A preliminary examination of the mucilaginous polysaccharides of the seeds of *Plantago lanceolata*." By J. MULLAN and E. G. V. PERCIVAL.
- "Constituents of the petroleum extracts of *zea maiz* stigmas." By A. ZAKI.
- "Constituents of the higher fungi. Part II. The unsaturated system of polypropenic acid A." By L. C. CROSS and E. R. H. JONES.
- "The constitution of pectic acid. Part III." By MISS S. LUCKETT and F. SMITH.
- "Samarium selenate and its solubility in water." By J. NEWTON FRIEND.
- "Attempts to prepare 7-substituted *bicyclo-1:2:2-aza-1-heptanes*." By G. R. CLEMO and E. HOGGARTH.
- "A determination of molecular symmetry in the diethyl dibenzyl series." By C. H. CARLISLE and MISS D. M. CROWFOOT.
- "The composition of the Ponndorf-Meerwein reduction product of mesityl oxide." By J. KENYON and D. P. YOUNG.
- "Experiments with thioacetals and related substances. Part I. The polar effect of sulphur in thioacetals." By E. ROTHSTEIN.
- "Experiments with thioacetals and related substances. Part II. The reaction between α -bromopropaldehyde diethylacetal and ethylthiol." By E. ROTHSTEIN.
- "Experiments with thioacetals and related substances. Part III. Comparison of the polar effect of sulphur with that of oxygen and nitrogen." By E. ROTHSTEIN.
- "Influence of poles and polar linkings on tautomerism in the simple three-carbon system. Part VI. Unbalanced systems." By E. ROTHSTEIN.
- "Retention of asymmetry during the Curtius and Beckmann changes." By J. KENYON and D. P. YOUNG.

ADDITIONS TO THE LIBRARY.

I. Donations.

IMPERIAL INSTITUTE. *Plant and Animal Products Department*. A survey of insecticide materials of vegetable origin. Edited by H. J. HOLMAN. London 1940. pp. vi + 155. 3s. 6d. net. (*Recd.* 11/10/40.)

From the Director.

SMITH, T. B. *Analytical processes: a physico-chemical interpretation*. 2nd edition. London 1940. pp. viii + 470. ill. 18s. net. (*Recd.* 18/10/40.)

From the
Publishers: Messrs. Edward Arnold & Co.

III. Pamphlets.

BORAX CONSOLIDATED, LTD. *Ceramic glazes*. By FELIX SINGER. London [1940]. pp. 95.

BRITISH STANDARDS INSTITUTION. *British Standard Specifications. No. 866—Part II—1940. War emergency. Schedule of sizes of tins and cans for commodities other than food products for British packers in the United Kingdom for the home trade*. pp. 15. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. *The industrial application of X-ray crystal analysis. Facilities provided by the National Physical Laboratory*. London 1934. pp. 14. ill.

November 1940

THE CHEMICAL SOCIETY

MEETING OUTSIDE LONDON.

SOUTH WALES.

In Swansea.

January 16th, 1941, at 6.30 p.m. **Lecture** on "The Combustion of Gaseous Hydrocarbons" by Mr. A. R. Ubbelohde, M.A., B.Sc. Joint Meeting with the Local Section of the Institute of Petroleum. To be held at the Royal Institution of South Wales, Swansea.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

MEETINGS OUTSIDE LONDON.

LECTURE AT BIRMINGHAM, OCTOBER 22nd.

A joint meeting with the Birmingham University Chemical Society was held in the Chemistry Department of the University at 11.30 a.m. on October 22nd, 1940. Professor W. N. Haworth, F.R.S., presided, and introduced the lecturer, Professor R. D. Haworth of the University of Sheffield, who spoke on "The Constituents of Natural Phenolic Resins." The lecturer gave a succinct account of a difficult field of research, which his own work has done so much to illuminate. The conformity of the natural resins to a simple basic structure was admirably emphasised and the mobilisation of resources for the synthesis of resins brilliantly and modestly described. A vote of thanks proposed by Dr. S. Peat and seconded by Dr. M. Stacey was carried with acclamation.

LECTURE AT GLASGOW, NOVEMBER 15th.

A meeting of the Society, in co-operation with the Local Sections of the Institute of Chemistry and the Society of Chemical Industry, was held at 7 p.m. on Friday, November 15th, in the Royal Technical College, with Professor F. J. Wilson in the Chair.

Dr. W. T. Astbury, F.R.S., delivered a lecture on "The Structure of Proteins." The Lecturer discussed the polypeptide nature of proteins and their classification in the light of their X-ray diffraction patterns. The properties of the different types of fibrous proteins were related to the configurations of their polypeptide chains. The structure of the globular proteins and the process of denaturation were considered, and the fine structure of recent X-ray photographs referred to an ideal stoichiometrical arrangement of amino-acids. Finally the Lecturer observed that in the borderland between living and non-living—viruses and chromosomes—were complex nucleoproteins.

A discussion followed, and a vote of thanks, proposed by Professor W. M. Cumming, was carried with acclamation.

LECTURE AT LIVERPOOL, OCTOBER 31st.

"A Lecture on Recent Work on the Chemotherapy of Protozoal Infection," by Professor Warrington Yorke, was given in the Muspratt Lecture Theatre, The University, Liverpool, on Thursday, October 31st, 1940, at 4 p.m. Professor T. P. Hilditch in the Chair.

The specific curative properties of cinchona bark against malaria were ultimately traced to the alkaloid quinine. This led to a search for drugs with curative properties in other parasitic diseases.

Arsenic was found to arrest the development of sleeping-sickness parasites, but at the same time was fatal to the host. An examination of a variety of organic arsenic compounds led to the discovery that atoxyl was specific and much less toxic.

This discovery led Ehrlich to conduct his well-known researches on aromatic arsenicals with the ultimate production of salvarsan and neo-salvarsan—two powerful antisyphilitic drugs.

Attention was next turned to other parasitical diseases, where it was found that arsenicals were not effective, but that tartar emetic had some beneficial effect. Organic antimonials were accordingly investigated and suitable aromatic compounds discovered.

Many conflicting but unsupported theories were held as to the nature of the physiological effects of these various drugs, and the Liverpool School of Tropical Medicine, in investigating this important problem, showed that arsenic compounds are reduced from the penta- to the tri-valent state in the host.

A disadvantage was discovered in the arsenicals and antimonials in that, should any of the parasites survive, they ultimately became immune from the effects of these drugs, even when transplanted to a fresh host.

Other types of compound were therefore sought, a lead being given by the observation that synthelin had a beneficial effect in Kalasar. This was at first attributed to the reduction of the blood-sugar content, for which the parasite had a great affinity.

Similar long-chain diaminated substances were tried, until finally diguanidinostilbenes proved to be the most satisfactory.

LECTURE AT SWANSEA, NOVEMBER 9th.

A meeting of the Society was held, jointly with the University College of Swansea Chemical Society, at 3 p.m. on Saturday, November 9th, in the Chemistry Lecture Theatre, University College, Swansea, with Professor J. E. Coates, Local Representative, in the Chair. Members of other chemical societies had been invited, and an audience of sixty assembled to hear Dr. H. J. Emeléus deliver a lecture on "Fluorine: some Recent Developments in the Chemistry of the Element and its Derivatives." The lecturer described the methods of preparing and manipulating the element, and the technique of the preparation and purification of many of its compounds. After describing in some detail the recent advances in our knowledge of the inorganic derivatives of fluorine, he dealt briefly with some aspects of its organic chemistry, and concluded with a reference to the electrochemistry of hydrogen fluoride. A discussion followed in which Mr. A. R. Ubbelohde, Mr. E. E. Ayling, Dr. L. E. Hinkel, Dr. C. A. Seyler, and Mr. G. E. Coates took part. A cordial vote of thanks to the lecturer was proposed by Mr. A. R. Ubbelohde, seconded by Mr. R. H. Davies, and carried with acclamation.

LECTURE AT SWANSEA, NOVEMBER 23rd.

A meeting of the Society was held jointly with the Local Section of the Institute of Chemistry and the University College of Swansea Chemical Society at 3 p.m. on Saturday, November 23rd, in the Chemistry Lecture Theatre, University College, Swansea, with Professor J. E. Coates, Local Representative, in the Chair. Professor E. K. Rideal delivered a lecture on "Some Aspects of Surface Action." After a brief indication of the experimental methods employed in his researches, the lecturer showed how the observation of phase-boundary potentials and surface pressures in monolayers brings out details of reaction mechanism inaccessible by other means. In this way, to the field of surface physics has been added that of two-dimensional chemistry, and the remarkable advances of knowledge already gained hold out great promise not only for physical and organic chemistry, but also for biochemistry, to the study of which this method of investigating organised surfaces contributes a new and direct approach. A short discussion followed, in which Sir Robert Robertson and Mr. G. E. Coates took part. A cordial vote of thanks to the lecturer was proposed by Sir Robert Robertson, seconded by Dr. L. E. Hinkel, and carried with acclamation. There were fifty-eight persons present.

OFFICIAL ANNOUNCEMENTS

DEATHS.

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

	Elected.	Died.
Arthur G. Bloxam	1888	November, 1940.
Edward W. Lucas	1905	September 16th, 1940.
William Lash Miller	1898	September 1st, 1940.
Edward C. Worden	1903	September 22nd, 1940.

and at their meeting on November 21st passed the following resolution regarding the death of Sir Joseph J. Thomson, O.M., F.R.S., Honorary Fellow, whose death was announced in the *Proceedings* for October :

"The President, Officers, and Council of the Chemical Society learned with profound regret at their meeting on November 21st, 1940, of the death on August 30th of Sir Joseph

J. Thomson, O.M., F.R.S., who was elected an Honorary Fellow of the Society on November 3rd, 1927.

" J. J. Thomson has achieved immortal fame in the World of Science as the discoverer of the electron and as a pioneer whose discoveries laid the foundations of modern Physics and exerted a profound and lasting influence on the development of chemistry. He will ever be remembered as a great experimentalist, as a great teacher, and as one whose outstanding personal qualities endeared him to all those with whom he came into contact. His enthusiasm for research and his genius for discovery served as an inspiration to the young men who were attracted to the Cavendish Laboratories from all parts of the world.

" By his death, Science in this country and throughout the world has suffered an irreparable loss. The Council mourn their distinguished Honorary Fellow, and express their deep sympathy to Lady Thomson."

LOCAL REPRESENTATIVE.

Dr. E. G. V. Percival, Chemistry Department, King's Buildings, West Mains Road, Edinburgh, has accepted the office of Local Representative for Edinburgh in the place of Dr. J. A. V. Butler.

ACKNOWLEDGMENT.

The Council have expressed their thanks to Mr. J. W. Peck for the presentation of volumes of the Society's publications.

RESEARCH GRANTS.

The Council have made the following grants from the Research Fund :

	£	s.	d.	£	s.	d.
GLASGOW UNIVERSITY.						
Dr. S. H. Tucker. " Synthesis of methylated fluoranthenes " ...	10	0	0			
				10	0	0
LEEDS UNIVERSITY.						
Dr. F. R. Goss. " Solvent effect in the electric polarisation of liquids "	10	0	0			
Dr. E. Rothstein. " Influence of poles in the simple three-carbon system (<i>continued</i>) "	10	0	0			
				20	0	0
LEICESTER, UNIVERSITY COLLEGE.						
Dr. L. Hunter. " The associating effect of the hydrogen atom " ...	10	0	0			
				10	0	0
LONDON, UNIVERSITY COLLEGE.						
Dr. E. D. Hughes. " Reaction mechanism "	20	0	0			
Miss A. R. Barratt. " Ionisation of alkyl chlorides	10	0	0			
Miss M. Brewer. " Addition to olefins "	10	0	0			
Mr. I. Dostrovsky. " Reactivity of certain organic halides " ...	10	0	0			
Miss N. Herzfeld. " Spectroscopy of isotopically related molecules "	10	0	0			
Miss R. Mygind. " Mechanism of replacement of ·OH by halogen "	10	0	0			
				70	0	0
SOUTHAMPTON, UNIVERSITY COLLEGE.						
Mr. E. Cartmell. " The Raman effect and its applications to petrol analysis "	10	10	0			
				10	10	0
				£120 10 0		

LIBRARY.

Until further notice the Library is open on weekdays from 10 a.m. to 4 p.m., except on Saturdays, when it is entirely closed.

For the Christmas Holidays the Library will be closed on Christmas Day and Boxing Day only.

FELLOWSHIP.

The resignations of 3 Fellows have been accepted, 1 Fellow has been re-instated, and the following 7 new Fellows have been elected :

Israel Dostrovsky.
Mabel Louie Hemming.
Cedric William Nelson Holmes.
Thomas Kennaway.

John Norman Smith.
Thomas Alan Robert Southern.
John Eric Langley Swallow.

GENERAL ANNOUNCEMENTS**PHYSICAL SOCIETY COLOUR GROUP.**

The Council wish to draw the attention of Fellows to the recent formation of the Physical Society Colour Group, which has as its objects :

(i) To provide an opportunity for the various groups of people concerned with colour—physicists, chemists, industrialists, etc.—to meet and become familiar with each other's problems.

(ii) To enable a representative opinion to be formed on various questions of standardisation, specification, nomenclature, etc.

(iii) Generally to encourage colorimetric investigations and to ensure that this country shall keep abreast of developments abroad.

The Group will hold meetings and organise such other activities as may best achieve the above objects, and will be governed by a Committee to be elected by members of the Group subject to the approval of the Council of the Physical Society.

Fellows of the Society are eligible to become members of the Colour Group. The annual subscription is five shillings, and a schedule of "block subscriptions" may be applied to each case in which a large number of members of any one Society become members of the Group.

Further particulars and forms of application for membership may be obtained from Mr. H. D. Murray, Honorary Secretary, Physical Society Colour Group, 1, Lowther Gardens, Exhibition Road, S. Kensington, London, S.W. 7.

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, December 16th, 1940. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

***Alexander, Peter**, British. 57, Richmond Hill Court, Richmond, Surrey. Student at the Imperial College, South Kensington.

Signed by : H. J. T. Ellingham, L. S. Theobald, H. V. A. Briscoe.

***Barratt, Audrey Ruth**, B.Sc. (Lond.), British. Holborn House, Queens Road, Aberystwyth. Research Student.

Signed by : H. G. Poole, E. D. Hughes, J. N. E. Day.

***Brewer, Marion Grenfell**, B.Sc. (Lond.), British. Greentrees, Maidenhead Court, Berks. Research Student.

Signed by : H. G. Poole, E. D. Hughes, J. N. E. Day.

***Crowther, Albert Frederick**, B.A.Hons. (Cantab.), British. 15, Industrial Street, Todmorden. Research Student.

Signed by : F. G. Mann, J. Chatt, D. Purdie.

***Draper, Alfred John Mountfort**, National Certificate in Chemistry, British. Analytical Chemist.

Signed by : E. B. R. Prideaux, Conmar Robinson, M. P. Balfe.

* Reduced Annual Subscription.

- Foulds, Harold**, M.P.S., British. Drayton, Cambridge Road, Rathmines, Dublin. Chief Chemist, Paines & Byrne, Ltd.
Signed by : Thos. J. Nolan, A. G. G. Leonard, A. O'Farrelly.
- ***Gaunt, Jack**, British. Sherburn, Church Lane, Adel, Leeds, 6. Student at Leeds University.
Signed by : J. W. Baker, F. R. Goss, W. Wild.
- ***Hawkins, Stanley Wallace**, British. Magdalen College, Oxford. Student.
Signed by : F. E. King, J. C. Smith, W. Baker.
- Heppenstall, Mollie Eileen**, B.Sc. and Ph.D. (Lond.), British. 236, Stanley Park Road, Carshalton, Surrey. Research Assistant.
Signed by : Samuel Smiles, Dorothy Jordan Lloyd, M. P. Balfe.
- ***Herzfeld, Nora**, B.Sc., 2nd Class Hons. (Lond.), British. The Edward Davies Chemical Laboratories, Aberystwyth. Research Student.
Signed by : C. K. Ingold, E. D. Hughes, H. G. Poole.
- ***Mygind, Rina Katherina Elisabeth**, B.Sc. (Lond.), British. Edward Davies Chemical Laboratories, Aberystwyth. Research Student.
Signed by : E. D. Hughes, Henry Terrey, J. N. E. Day.
- ***Stickings, Charles Ewart**, B.Sc. (Lond.), British. Garth, Prospect Street, Aberystwyth. Research Student.
Signed by : H. G. Poole, E. D. Hughes, J. N. E. Day.
- ***Thorp, James Harold**, B.Sc.Hons. (Lond.), British. 16, Harrowby Lane, Grantham. Research Student at University College, Nottingham.
Signed by : J. Masson Gulland, F. R. Bradbury, J. C. Roberts.
- ***Tivey, David John**, Inter B.Sc. and Subsidiary (Physics), British. Woodside, Willesley Road, Ashby-de-la-Zouch. Student at Loughborough College.
Signed by : J. M. Connolly, H. Turner, A. R. Harriman, G. E. Charlsh.

**UNDER SPECIAL PROVISIONS APPERTAINING TO CANDIDATES RESIDENT
ABROAD.**

- Slater, Stanley Nelson**, M.Sc. (N.Z.), D.Phil. (Oxon.), A.I.C., A.N.Z.I.C., British. Chemistry Department, University of Otago, Dunedin, New Zealand. Assistant Lecturer in Chemistry.
Signed by : F. G. Soper, G. H. Carter.
- Steacie, Edgar William Richard**, M.Sc. and Ph.D. (McGill.), British. National Research Laboratories, Sussex Street, Ottawa, Canada. Director, Division of Chemistry, National Research Laboratories.
Signed by : G. S. Whitby.

PAPERS RECEIVED

List of papers received between October 25th and November 25th, 1940.

- "The preparation of some derivatives of sulphanilamide." By W. COCKER.
- "Further experiments on the oxidation of alkyl telluride." By M. P. BALFE and K. N. NANDI.
- "The condensation of halogeno-pyridines, -quinolines, and -isoquinolines with sulphanilamide." By M. A. PHILLIPS.
- "Benzanthrones. Part IV. The synthesis of 2- and 4-methyl-1-phenyl-naphthalene-2'-carboxylic acid. The conversion of benzfluorenones into benzanthrones." By F. G. BADDAR.
- "Catalytic toxicity and chemical structure. Part VII. Elimination of catalyst poisons by conversion into derivatives of shielded type." By E. B. MAXTED and R. W. D. MORRISH.
- "The properties of 3:6-anhydroglucose." By W. N. HAWORTH, L. N. OWEN, and F. SMITH.

* Reduced Annual Subscription.

- "1-Methoxytriphenylene and 2-methoxytriphenylene." By W. S. RAPSON.
- "The elimination of formaldehyde in the analysis of formaldehyde-formic acid mixtures." By A. HICKLING and F. RODWELL.
- "The action of periodic acid on glucosamine derivatives." By A. NEUBERGER.
- "The preparation of 3-methylglucosamine." By A. NEUBERGER.
- "The synthesis of 1-methyl-6-isopropylphenanthrene." By S. N. SLATER.
- "Polycyclic aromatic hydrocarbons. Part XXVII." By G. M. BADGER, F. GOULDEN, and F. L. WARREN.
- "The structure of the nitroindazoles and their methyl ethers. By I. M. BARCLAY, N. CAMPBELL, and G. DODDS.
- "Triterpene resinols and related acids. Part XII. The oxidation of β -amyradienyl acetate I with selenium dioxide, a new route to Jacob's ketodiols, $C_{30}H_{44}O_3$." By C. W. PICARD and F. S. SPRING.
- "The dehalogenation of 6-chloro-3-benzoyloxy- Δ^4 -cholestene." By F. S. SPRING and G. SWAIN.
- "The Adamkiewicz, Hopkins and Cole, and Rosenheim tests for tryptophan. An investigation of the configuration of the organic molecule responsible for the colour formation and its bearing on the constitution of yohimbine, with a note on the action of formaldehyde on tryptophan." By D. G. HARVEY, E. J. MILLER, and W. ROBSON.
- "The organic compounds of gold. Part VIII. Dialkyl gold derivatives of dibasic acids." By C. S. GIBSON and W. T. WELLER.
- "The organic compounds of gold. Part IX. The structure of tetraethylsulphatodigold (diethylgold sulphate), $(Et_2Au)_4(SO_4)_2$." By R. V. G. EWENS and C. S. GIBSON.

ADDITIONS TO THE LIBRARY

I. Donations.

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. Official and tentative methods of analysis. 5th edition. Washington 1940. pp. xii + 757. ill. \$5. (*Recd.* 31/10/40.)

From the Association.

FRANCIS, WILFRID. Boiler house and power station chemistry. London 1940. pp. xii + 203. ill. 15s. net. (*Recd.* 18/11/40.) From the Publishers: Messrs. Edward Arnold & Co.

I. G. FARBENINDUSTRIE AKTIENGESELLSCHAFT. *Medico-Chemical Research Laboratories*. Medicine in its chemical aspects. Vol. III. Leverkusen 1938. pp. 416. ill. (*Recd.* 31/10/40.) From Dr. K. Wallersteiner.

MARTIN, HUBERT. The scientific principles of plant protection with special reference to chemical control. 3rd edition. London 1940. pp. x + 385. 22s. 6d. net. (*Recd.* 18/11/40.)

From the

Publishers: Messrs. Edward Arnold & Co.

II. Pamphlets.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. No. 902—1940. Methods of testing latex, raw rubber, and unvulcanised compounded rubber. pp. 29. ill.

— — — No. 903—1940. Methods of testing vulcanised rubber. pp. 74. ill.

BRITISH STANDARDS INSTITUTION. British Standard Specifications. War emergency. No. 909—1940. Vitamins A and D in oil for animal feeding purposes. pp. 15.

— — — No. 910—1940. Controlled cod-liver oil mixture for animal feeding purposes. pp. 15.

— — — Nos. 925—926—1940. Oils, thinners, driers, and extenders. pp. 30.

— — — Nos. 927—928—1940. Pigments: white, black, and coloured. pp. 23.

— — — No. 929—1940. Ready mixed paints, priming paint, undercoating paints, finishing coat paints—oil glass. pp. 15. ill.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. Methods for the detection of toxic gases in industry. Leaflet No. 12. Organic halogen compounds. pp. 6.

— *Fuel Research*. Physical and chemical survey of the national coal resources, No. 44. Methods of analysis of coal and coke. pp. vi + 85. ill.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. Lecture on "The mechanism of enzyme action." By J. H. QUASTEL. pp. 27.

MINISTRY OF AGRICULTURE AND FISHERIES. Fishery Investigations. Series 1, Vol. IV, No. 2. Chemical methods for the study of river pollution. By C. H. ROBERTS, J. GRINDLEY and E. H. WILLIAMS. London 1940. pp. 36. ill.

THE CHEMICAL SOCIETY

MEETING IN LONDON.

Chemical Society, Burlington House, Piccadilly, W. 1. Thursday, February 6th, 1941, at 1.45 p.m. **Lecture** on "Plasticisers" by Mr. F. W. Clark, B.Sc., F.I.C. Joint meeting of the Chemical Society and the Plastics Group of the Society of Chemical Industry.

MEETINGS OUTSIDE LONDON.

BRISTOL.

February 13th, 1941, at 6.30 p.m. **Tilden Lecture** on "Vitamins of the B Group" by Professor A. R. Todd, D.Sc., D.Phil. To be held in the Chemistry Lecture Theatre of the University.

EDINBURGH.

January 27th, 1941, at 7.15 p.m. **Lecture** on "Nucleic Acids" by Professor J. M. Gulland, M.A., D.Sc. Joint meeting with the Institute of Chemistry and the Society of Chemical Industry to be held at the North British Station Hotel.

February 24th, 1941, at 7.15 p.m. **Tilden Lecture** on "Some Problems in Macromolecular Chemistry" by Professor H. W. Melville, D.Sc., Ph.D. To be held at the North British Station Hotel.

GLASGOW.

February 21st, 1941, at 7 p.m. **Lecture** on "Correlations between Cancer-producing Compounds" by Professor J. W. Cook, D.Sc., F.R.S. To be held in the Societies' Room of the Royal Technical College.

LIVERPOOL.

February 13th, 1941, at 4 p.m. **Lecture** on "Some Chemical Aspects of Modern Bacteriological Research" by Professor H. D. Wright, B.A., M.D., D.Sc. Joint meeting with the Liverpool University Chemical Society to be held in the Lecture Theatre of the University.

NORTH WALES.

February 7th, 1941, at 5.30 p.m. **Lecture** on "The Chemistry of Rottlerin and Related Topics" by Professor A. Robertson, M.A., B.Sc., Ph.D. Joint meeting with the University College of N. Wales Chemical Society, to be held in the Chemistry Lecture Theatre of the College, Bangor.

SHEFFIELD.

February 28th, 1941, at 5.30 p.m. **Lecture** on "Diazotisation" by Professor J. Kenner, D.Sc., F.R.S. To be held in the Chemistry Lecture Theatre of the University, Western Bank.

SOUTH WALES.

In Cardiff.

February 15th, 1941, at 3 p.m. **Lecture** on "Disinfectants" by Mr. N. Berry, B.Sc., A.I.C. Joint meeting with the Institute of Chemistry and the Society of Chemical Industry. To be held in the Chemistry and Physics Lecture Theatre, University College of South Wales.

In Swansea.

January 16th, 1941, at 6.30 p.m. **Lecture** on "The Combustion of Gaseous Hydrocarbons" by Mr. A. R. Ubbelohde, M.A., B.Sc. Joint meeting with the Local Section of the Institute of Petroleum. To be held in the Chemistry Lecture Theatre, University College.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY.

MEETINGS OUTSIDE LONDON.

LECTURE AT CARDIFF, DECEMBER 7th.

A meeting of the Society was held jointly with the Local Sections of the Institute of Chemistry and the Society of Chemical Industry at 3 p.m., on Saturday, December 7th, at the University College, Cathays Park, Cardiff, when Mr. W. D. Williams, B.Sc., A.M.I.Chem.E. delivered a lecture on "Some New Developments in the Petroleum Industry." After describing the applications of cracking, polymerisation, and hydrogenation processes in the manufacture of motor spirit, the lecturer dealt with the successful attempts at the preparation of pure hydrocarbons of high octane number, and in conclusion, discussed the syntheses of a variety of organic compounds from hydrocarbons having their origin in petroleum. An interesting discussion followed, and among the contributors were Dr. N. M. Cullinane (Chairman), Mr. P. V. Lloyd, Dr. D. P. Evans, and Dr. J. F. J. Dippy. A cordial vote of thanks to the lecturer was proposed by Mr. F. Kernick, seconded by Mr. P. V. Lloyd, and carried with acclamation.

LECTURE AT DUNDEE, NOVEMBER 25th.

A meeting of the Society was held in University College, Dundee, at 4.30 p.m. on Monday, November 25th, with Professor Alexander McKenzie, F.R.S., in the chair. Invitations to attend the meeting were sent to St. Andrews University Chemical Society, to Chemists living in Dundee and district, and to Students in the Chemistry Department. Professor F. A. Paneth, Ph.D., gave a lecture on "The Chemical Exploration of the Stratosphere." The Lecturer described the types of apparatus that were used in the investigation of the Chemical composition of the Stratosphere at different heights, and showed the results that had so far been obtained by their use. The lecture was illustrated by lantern slides. A cordial vote of thanks to the lecturer was proposed by Professor W. F. K. Wynne-Jones and carried with acclamation.

LECTURE AT EDINBURGH, NOVEMBER 26th.

A joint meeting of the Society with the Local Sections of the Institute of Chemistry and Society of Chemical Industry, and the Edinburgh University Chemical Society, was held in the Biochemical Lecture Theatre of the University, Teviot Place, at 6.30 p.m., with Mr. R. M. Burnett in the Chair.

Professor F. A. Paneth, Ph.D., gave a stimulating address on "The Chemical Exploration of the Stratosphere," in which he discussed the significance of the distribution of helium, oxygen, and ozone. Professor James Kendall, Professor Max Born, and Dr. E. B. Ludlam contributed to the discussion, and a vote of thanks to the lecturer proposed by Mr. J. W. Minnis was received with enthusiasm.

LECTURE AT NOTTINGHAM, NOVEMBER 28th.

A lecture was delivered by Dr. L. Hunter at a meeting of the Society, held conjointly with the Nottingham University College Physical and Chemical Society, on Thursday, November 28th, at 3.30 p.m., in the Physics Lecture Theatre of University College. A large number were present, and Professor J. Masson Gulland introduced the lecturer, who spoke on "Bivalent Hydrogen: Some New Aspects of Tautomerism." An admirable historical survey of the problem of bivalent hydrogen and of chelation was given by the lecturer, who proceeded to consider and classify tautomeric changes in the light of this concept. A short discussion followed, and a vote of thanks, proposed by Mr. J. C. Roberts and seconded by Mr. F. R. Bradbury, was carried with acclamation.

LECTURE AT SHEFFIELD, NOVEMBER 8th.

A joint meeting with the Sheffield University Chemical Society was held in the Chemistry Department at the University at 5.30 p.m. on November 8th, 1940, with Professor R. D. Haworth in the Chair.

Professor E. K. Rideal delivered a lecture on "Reactions in Monolayers." The lecturer described how methods originally devised for investigating the properties of monolayers on water surfaces have been adapted to the study of chemical reactions occurring in monolayers. Many interesting examples of such reactions were given, special reference being made to the bearing of this work on biological problems.

A vote of thanks proposed by Dr. J. M. Robertson and seconded by Mr. H. D. Turner was carried with acclamation.

OFFICIAL ANNOUNCEMENTS
DEATHS.

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

	Elected.	Died.
John William Blagden	1922.	November 28th, 1940.
Rudolph Demuth	1911.	October 24th, 1940.

ACKNOWLEDGEMENTS.

The Council have expressed their thanks to Miss K. A. Cumming and Mr. G. A. Stokes for presenting volumes of the Society's publications and to Professor D. H. Peacock for a contribution to the Publications Fund.

RESEARCH FUND.

In view of present conditions, the Council have decided to consider applications for grants from the Research Fund of the Society as they are received. Fellows wishing to apply for grants should make application on the form obtainable from the General Secretary.

FELLOWSHIP.

The resignations of 5 Fellows have been accepted, 1 Fellow has been removed for non-payment of annual subscriptions under the action of Bye-Law 15, and the following 16 new Fellows have been elected :

Peter Alexander.	Mollie Eileen Heppenstall.
Audrey Ruth Barratt.	Nora Herzfeld.
Marion Grenfell Brewer.	Rina Katherina Elisabeth Mygind.
Albert Frederick Crowther.	Stanley Nelson Slater.
Alfred John Mountfort Draper.	Edgar William Richard Steacie.
Harold Foulds.	Charles Ewart Stickings.
Jack Gaunt.	James Harold Thorp.
Stanley Wallace Hawkins.	David John Tivey.

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 January 13th, 1941. Such objections will be treated as confidential. The forms of application are displayed in the Library.)

***Baxter, Eric George**, Inter.B.Sc.(Lond.), British. 4, The Approach, Hendon, N.W. 4. Works Chemist and Undergraduate of University of London at Birkbeck College.

Signed by : H. Lambourne, D. J. G. Ives, F. J. Llewellyn.

Capper, Norman Stewart, D.Sc.(Q.U.B.), British. Rutherford Technical College, Newcastle-upon-Tyne, 4. Head of Chemistry Department.

Signed by : Harold A. Scarborough, Pat. D. Ritchie, J. R. Rowlands.

* Reduced Annual Subscription.

- *Datta, Satya Prakash**, B.Sc.(Lond.), British Indian. 5, Randolph Crescent, W. 9. Studying Medicine.
Signed by : Henry Terrey, E. D. Hughes, C. K. Ingold.
- *Ellis, Bernard**, English. 10, St. Oswald Road, Snapethorpe, Wakefield. Student at Leeds University.
Signed by : J. W. Baker, W. Wild, J. Colvin.
- *Farrar, Wilfred Vernon**, B.Sc.(Lond.), British. University College, Nottingham. Research Student.
Signed by : J. Masson Gulland, John C. Roberts, F. R. Mumford.
- Ghosh, Ranajit**, D.Sc.(Calcutta), Indian. c/o Lloyds Bank, Ltd., 94, Oxford Road, Manchester, 13. Research Worker, Manchester University.
Signed by : G. N. Burkhardt, Alex R. Todd, F. S. Spring.
- *Hargreaves, Kenneth**, British. 4, Parkfield Avenue, Bradford Moor, Bradford. Chemistry Student at Leeds University.
Signed by : J. W. Baker, W. A. Wightman, W. Wild.
- Heath, Gerald Duncan**, B.Sc.(Reading), A.I.C., British. Parsonage Farm, Idmiston, Salisbury.
Signed by : S. R. Finn, R. W. Pittman, G. S. Hartley.
- Kerswell, Harold Henry**, British. 30, Lowlands Road, Eastcote, Pinner. Manufacturer of Food specialities. 25 years' experience in the Pharmaceutical Trade.
Signed by : J. Wycliffe Peck, Rupert Wollby Brooke, Thos. J. E. Gardner.
- Lawson, Gavin**, A.I.C., Ph.C., M.P.S., British. 33, Polefield Road, Blackley, Manchester, 9. Chief Chemist to firm of manufacturers.
Signed by : J. Vance Hopper, W. M. Cumming, Alfred R. Cumming.
- *Mullins, Brian Percival**, B.Sc.(Lond.), British. 230, Broadwalk, Blackheath, S.E. 3. Civil Servant—fuels and oils research.
Signed by : G. H. Jeffery, Arthur I. Vogel, D. M. Cowan.
- Oswin, Charles Robert**, B.Sc. and M.A.(Oxon.), A.I.C., British. 120, Wellington Road, Bridgewater. Research Chemist.
Signed by : S. G. P. Plant, D. Ll. Hammick, F. E. King.
- Parkinson, Alexander**, M.Sc.(Manc.), British. 10, Livingstone Street, Chorlton-on-Medlock, Manchester, 13. Research Student, Manchester University.
Signed by : G. N. Burkhardt, Alex. R. Todd, F. S. Spring.
- Stuckey, Robert Edwin**, B.Sc.(Lond.), A.I.C., Ph.C., British. 2, Park Avenue, Southport. Staff Chemist, Home Office Forensic Science Laboratory.
Signed by : Wilfred H. Linnell, William Rigby, J. B. Frith.

UNDER SPECIAL PROVISION APPOINTING TO CANDIDATES RESIDENT ABROAD.

- Schmelkes, Franz Carl**, Ph.D.(Prague), American. 83, High Street, Montclair, N.J., U.S.A. Assistant director of research at Wallace & Tierman Co., Inc., Newark, N.J.
Signed by : Kaufman George Falk, Erwin Schwenk.
- Sobotka, Harry Hermann**, Ph.D.(Munich), American. Mount Sinai Hospital, New York City, U.S.A. Chief Chemist to Mount Sinai Hospital.
Signed by : A. C. Chibnall.

* Reduced Annual Subscription.

PAPERS RECEIVED

List of papers received between November 25th and December 19th, 1940 :

- “The formation of ethyl 2 : 5-diketopiperazine-3 : 6-diacetate from ethyl aspartate.” By W. COCKER.
- “Chalkones : production of 2-aryltetral-1-ones from chalkone dibromides *via* the related β -aroyl- α -arylpropionitriles.” By S. HIDAYETULLA, R. C. SHAH, and T. S. WHEELER.

- “The formation of trichloroacetic acid from perchloroethylene by atmospheric oxidation.”
By K. C. BAILEY and W. S. E. HICKSON.
- “Qualitative semimicro-analysis with reference to Noyes and Bray’s system: The thallium group.” By MISS C. C. MILLER.
- “Observations on the chemical constitution of galactogen from *Helix Pomatia*. Part I. Galactose as a component of a polysaccharide of animal origin.” By D. J. BELL and E. BALDWIN.
- “Aminosulphonic acid analogues of natural aminocarboxylic acids.” By H. McILWAIN.

ADDITIONS TO THE LIBRARY

I. Donations.

HARRY, RALPH G. Modern cosmeticology: the principles and practice of modern cosmetics. New York 1940. pp. xiv + 288. ill. \$5. (Recd. 4/12/40.) From the Author.

IMPERIAL INSTITUTE. *Mineral Resources Department*. Reports on the mineral industry of the British Empire and foreign countries. Chrome ore and chromium. By ROBERT ALLEN and G. E. HOWLING. London 1940. pp. 118. (Reference.) 2s. 6d. net.

From the Director.

MEDICAL RESEARCH COUNCIL. *Special Report Series*, No. 235. The chemical composition of foods. By R. A. McCANCE and E. M. WIDDOWSON. London 1940. pp. 150. (Reference.) 4s. net.

From Dr. C. Ainsworth Mitchell.

II. By Purchase.

AMERICAN GAS ASSOCIATION. Fuel flue gases: the application and interpretation of gas analyses and tests. New York 1940. pp. x + 198. ill. \$5. (Recd. 28/11/40.)

BODANSKY, MEYER, and BODANSKY, OSCAR. Biochemistry of disease. New York 1940. pp. xii + 684. ill. \$8. (Recd. 28/11/40.)

BRANDT, KARL. Whale oil: an economic analysis. Stanford University 1940. pp. xii + 264. ill. \$3. (Recd. 28/11/40.)

BURTON, E. F., SMITH, H. GRAYSON, and WILHELM, J. O. Phenomena at the temperature of liquid helium. (American Chemical Society, Monograph Series.) New York 1940. pp. xii + 362. ill. \$6. (Recd. 28/11/40.)

ELLIS, CARLETON. Printing inks: their chemistry and technology. New York 1940. pp. 560. ill. \$7. (Recd. 28/11/40.)

HAMMETT, LOUIS P. Physical organic chemistry: reaction rates, equilibria, and mechanisms. New York 1940. pp. x + 404. ill. \$4. (Recd. 10/12/40.)

JEANS, SIR JAMES. An introduction to the kinetic theory of gases. Cambridge 1940. pp. viii + 311. ill. 15s. net. (Recd. 28/11/40.)

JENNY, A. The anodic oxidation of aluminium and its alloys. Translated by WINI-

FRED LEWIS. London 1940. pp. viii + 231. ill. 16s. net. (Recd. 28/11/40.)

MANTELL, C. L. Industrial electrochemistry. 2nd edition. New York 1940. pp. x + 656. ill. \$5.50. (Recd. 4/12/40.)

MOELWYN-HUGHES, E. A. Physical chemistry: an introduction. Cambridge 1940. pp. viii + 660. ill. 45s. net. (Recd. 28/11/40.)

NEWITT, DUDLEY M. The design of high pressure plant and the properties of fluids at high pressures. Oxford 1940. pp. viii + 491. ill. 35s. net. (Recd. 28/11/40.)

PAULING, LINUS. The nature of the chemical bond and the structure of molecules and crystals. 2nd edition. Ithaca 1940. pp. xvi + 450. ill. \$4.50. (Recd. 28/11/40.)

RADLEY, J. A. Starch and its derivatives. London 1940. pp. x + 346. ill. 22s. net. (Recd. 28/11/40.)

SEARLE, ALFRED B. Refractory materials: their manufacture and uses. 3rd edition. London 1940. pp. xvi + 895. ill. 45s. net. (Recd. 28/11/40.)

SHEPARD, HAROLD H. The chemistry and toxicology of insecticides. Minneapolis 1939. pp. iii + 383. ill. 22s. net. (Recd. 28/11/40.)

SKINKLE, JOHN H. Textile testing: physical, chemical, and microscopical. [New York] 1940. pp. xii + 272. ill. \$3. (Recd. 28/11/40.)

STERN, H. J. Practical latex work. Leicester 1940. pp. 103. ill. 5s. 6d. net. (Recd. 3/12/40.)

WALTER, F. G. The manufacture of compressed yeast. London 1940. pp. viii + 254. ill. 15s. net. (Recd. 28/11/40.)

III. Pamphlets.

BRITISH STANDARD INSTITUTION. British Standard Specifications, No. 911—1940. Method for the biological assay of vitamin D₃ by the Chick method. pp. 20.

MA, TSU SHENG. Studies on synthetic drugs. (i) Partial reduction of some alkyl quaternary salts of pyridine and quinoline carbonamides. (ii) Studies toward the synthesis of 4-methyl-5, 5-dialkyluracil. Chicago 1940. pp. 31.