

ABSTRACTS OF THE PROCEEDINGS
OF
THE CHEMICAL SOCIETY.

Vol. I. Nos. 1–15.
JANUARY—DECEMBER, 1885.

EDITED BY THE SECRETARIES.

LONDON:
J. VAN VOORST, 1, PATERNOSTER ROW.
1885.

LONDON :
HARRISON AND SONS, PRINTERS IN ORDINARY TO HER MAJESTY,
ST. MARTIN'S LANE.

ERRATA.

Line	Page			
3	18 from top,	<i>for</i> A. J. Green	<i>read</i> A. G. Green	
17	7 „ bottom, „	Davis	„ Davies	
46	1 „ top, „	36	„ 26	
46	18 „ „ „	densities	„ boiling points	
51	2 „ bottom, insert	By C. S. S. Webster		
77	5 „ top, <i>for</i>	James Bell, M.A.,	<i>read</i> James Bell, B.A., LL.M.	
87	7 „ bottom, „	“ burnt ”	„ burst.	
92	20 „ „ „	ones, provided	„ ones. Provided	
92	18 „ „ „	acid ;	„ acid,	
93	14 „ „ „	Shmidzu	„ Shimidzu	
94	1 „ top „	nitrous	„ nitric	
96	16 „ bottom „	2(HONH ₃)NO ₂	„ 2(HONH ₃)NO ₃	
97	1 „ top „	anthraquinones	„ anthraquinone	
99	16 „ bottom „	Print	„ Prout	
106	8 „ „ „	Metacinnam	„ Metacinnamene	
117	2 „ „ „	13th	„ 10th	
124	13 „ top „	H ₂ O ₃	„ H ₂ O ₄	
130	16 „ „ „	fractions	„ crystals	

DATES OF ISSUE OF THE MONTHLY NUMBERS OF THE JOURNAL OF THE CHEMICAL SOCIETY TO FELLOWS.

January number was issued.....	7th January.
February „	31st „
March „	28th February.
April „	1st April.
May „	2nd May.
June „	5th June.
July „	3rd July.
August „	1st August.
September „	1st September.
October „	7th October.
November „	31st „
December „	3rd December.
Index „	19th January.

LIST OF GRANTS MADE FROM THE RESEARCH FUND DURING THE YEAR.

£75 to Professor T. E. Thorpe: for the investigation of the relation between surface-tension and viscosity of liquids and their chemical nature.

£15 to Dr. A. B. Griffiths: for the continuation of his experiments on the use of ferrous sulphate as a manure.

£20 to Dr. J. W. James: for the study of the homologues of taurine.

£20 to Dr. Hodgkinson: for the continuation of his investigation of fluorene and its derivatives.

£10 to Mr. G. Stallard: for the examination of certain bromonaphthalenesulphonic acids.

£20 to Mr. Thomas Turner: for the continuation of his experiments on the influence of silicon on the properties of iron and steel.

£25 to Dr. G. H. Bailey: for the examination of zirconium compounds with a view to the discovery of suitable means of determining the atomic weight of the element.

£50 to Dr. A. K. Miller: to investigate the products of the decomposition of solid paraffin by heat.

£10 to Mr. W. W. J. Nicol: in aid of an investigation of the nature of solution.

LIST OF FELLOWS ELECTED DURING 1885.

Name.	Proposed.	Elected.
Adie, Richard Haliburton	November 5th ..	December 3rd.
Adrianee, John Sabine	" "	" "
Aikman, Charles Morton	" "	" "
Alcock, Frank Harris	March 5th	May 7th. "
Amphlett, E. Greenhill	February 5th ...	March 5th.
Anderson, James	November 5th ..	December 3rd.
Bell, William James	June 18th	November 19th.
Blades, Charles M.	January 15th ...	March 5th.
Blaine, R. Gordon	February 5th ...	" "
Burnett, Joseph Fearon	May 7th	June 4th.
Cannon, Matthew	March 5th	May 7th.
Christopher, Robert G.	November 19th .	December 17th.
Clark, Edward Brown	" 5th ..	" 3rd.
Clarke, W. Lane	December 4th ...	February 5th.
Cohen, Julius B.	January 15th ...	March 5th.
Collie, J. Norman	December 4th ...	February 5th.
Cousins, William J.	November 19th .	December 17th .
Davies, Frederick Mark	February 5th ..	March 5th.
Dechan, Martin	March 5th	May 7th.
De Koningh, Leonard	May 21st.	June 18th.
De Souza, Edward	June 18th	November 19th.
Dixon, Augustus E.	December 4th ..	February 5th.
Dunstan, Malcolm J. R.	November 5th ..	December 3rd.
Dyson, Gibson	June 4th	November 19th.
Ellis, George E. R.	November 5th ..	December 3rd.
Embrey, George	December 4th ...	February 5th.
Epps, James, junr.	November 5th ..	December 3rd.
Farmer, E. Howard	February 5th ...	March 5th.
Freear, Harvey M.	March 19th	May 7th.
Fletcher, Lazarus	November 5th ..	December 3rd.
Follows, Harold	March 19th	May 7th.
Gadd, William L.	November 5th ..	December 3rd.
Gemnell, George Harrison.	February 19th ..	May 7th.
Genth, F. A.	March 19th	" "
Gibson, Adam	January 15th ...	March 5th.
Girdwood, William Prout	November 5th ..	December 3rd.
Gregory, G. M.	March 19th	May 7th.
Green, Arthur George	December 18th ...	February 5th.
Green, W. H., M.D.	November 5th ..	December 3rd.
Greenway, Thomas J.	April 16th	June 4th.
Hall, Alfred Daniel	May 7th	June 4th.
Hards, William Benjamin	February 19th ...	May 7th.
Haslett, Henry	April 16th	June 18th.
Harvey, Ernest William	November 5th ..	December 3rd.
Hepworth, Thomas C.	May 21st.	June 18th.

Name.	Proposed.	Elected.
Henderson, George G.	December 18th..	February 5th.
Hirst, George.	November 5th ..	December 3rd.
Hogg, Edward Grindle	April 2nd	May 7th.
Hope, Charles Frederick	March 5th.	" "
Holgate, Thomas.	November 5th. ..	December 3rd.
Howard, Edward E.	" " " "	" "
Hughes, T. Vaughan.	May 7th	June 4th.
Hurst, George	November 5th ..	December 3rd.
Husband, John Cecil	" "	" "
Hutcheson, John B.	January 15th ..	March 5th.
Hunter, Matthew	November 5th ..	December 3rd.
Hyatt, William H.	June 4th	November 19th.
Ivatt, Albert	June 18th	November 19th.
Jones, George Selkirk.	December 4th. ..	February 5th.
Knight, Alfred Henry	February 5th ..	March 5th.
Lang, William, junr.	December 3rd. ..	
Langer, Charles	May 21st	June 18th.
Laurie, Arthur Pillans	December 3rd. ..	
MacEwan, Peter.	December 3rd. ..	
Mackey, McD. William	January 15th ..	March 5th.
MacNair, Duncan Scott	May 7th	June 4th.
Mallet, F. R.	April 2nd	May 7th.
Martin, Gerald.	June 4th	November 19th.
Menzies, Thomas J.	" " " "	" "
Miller, N. H. J.	March 5th.	May 7th.
Milne, Alexander.	" " " "	" "
Muskett, Thompson	February 19th ..	" "
Newbold, George Francis.	May 7th.	June 4th.
Newton, Walter.	December 3rd. ..	
Nicholson, Thomas G.	May 7th	June 4th.
Parkhurst, Walter Frederick	November 6th ..	February 5th.
Patterson, George	January 15th ..	March 5th.
Paul, Lewis Gordon	November 5th ..	December 3rd.
Peskitt, Leonard	" " "	" "
Ranken, Charles	November 5th ..	December 3rd.
Reid, William Hamilton.	March 19th.	May 7th.
Richardson, Arthur	April 16th.	June 18th.
Rindskoff, Franz	December 4th. ..	February 5th.
Scamnell, Luther R.	November 5th ..	December 3rd.
Sharpe, James	May 21st.	June 18th.
Sim, James.	November 5th ..	December 3rd.
Simpson, F. W.	January 15th. ..	March 5th.
Smith, James Pender	May 21st.	June 18th.
Spilsbury, James	" " " "	" "
Spottiswoode, William H.	" 7th.	" 4th.
Staples, Henry J.	November 5th ..	December 3rd.
Steel, Robert Elliot	February 19th ..	May 7th.
Stephen, Stephenson.	November 5th ..	December 3rd.

VIII

Name.	Proposed.	Elected.
Stocks, J. Marshall	February 5th ...	March 5th.
Stuart, C. M.	March 5th.....	May 7th.
Sutton, Francis Napier.....	December 3rd...	
Stoker, Henry.	November 5th ..	December 3rd.
Tate, John A.....	April 2nd.....	May 7th.
Taylor, Charles Johnson.....	May 7th	June 4th.
Thomson, Andrew.....	November 19th..	December 17th.
Thorne, Edward E. H.....	" 5th..	" 3rd.
Tyson, Thomas B.....	" " "	" "
Viera, J. Dominic	June 4th.....	November 19th.
Vulte, Herman, Ph.B.	" "	" "
Wallace, Robert.....	May 7th	June 4th.
Watson, Charles	February 5th ...	March 5th.
White, Harold.....	December 4th...	February 5th.
Whitehead, Henry B.....	" ..	" "
Will, William Watson	November 19th..	
Williams, Henry Collins.....	" 5th..	December 3rd.
Williams, W. Collingwood.....	January 15th ...	March 5th.
Wilson, Alfred C.....	" ..	February 5th.
Wilson, William Matthew	November 19th..	December 17th.
Wiltshire, Ernest William.....	June 18th	November 19th.
Winstone, Arthur Benjamin	" 4th	" "
Wormley, T. G.....	" "	" "
Wrenn, William A.....	December 18th..	February 5th.
Wright, James C.	June 4th	November 19th.
Wynne, William Palmer	March 5th.....	May 7th.
Young, Alfred C.	December 18th ..	February 5th.
Young, Charles F.	November 5th...	December 3rd.

TITLES OF PAPERS READ AT MEETINGS OF THE SOCIETY DURING 1885.

	Page in Abstracts.	Page in Trans- actions.
<i>January 15th.</i>		
1. On the Atomic Weight of Titanium. By Prof. T. E. Thorpe, F.R.S.	1	108
2. Note on the Constitution of Propylene-chlorhydrol. By Dr. H. F. Morley and A. G. Green.....	3	132
3. The Action of Zinc Ethide on the Benzoate from Propylene chlorhydrol. By the same.....	3	134
4. On Nitrobenzalmalonic Acids. By C. M. Stuart, M.A.	4	155
5. Alkaloids of <i>Nux Vomica</i> . III. Some Experiments with Strychnine. By W. A. Shenstone	5	139
6. On the Physiological Action of Brucine and of Bromostrychnine. By Dr. T. Lauder Brunton, F.R.S.....	5	143
7. Crystallography of Bromostrychnine. By H. A. Meiers, M.A.	5	144
8. On the Formation of Pyridine Derivatives. By H. v. Pechmann and W. Welsh	5	145
<i>February 5th.</i>		
9. On Chemical Changes in their Relation to Micro-organisms. A Lecture by Prof. Frankland, D.C.L., LL.D., F.R.S.	9	159
<i>February 19th.</i>		
10. On Benzoylactic Acid and some of its Derivatives. Part II. By Dr. W. H. Perkin, Jun.....	17	240
11. On Toughened Filter-paper. By E. E. H. Francis....	19	183
12. The Detection and Estimation of Iodine. By Ernest H. Cook, B.Sc. (Lond.).....	19	471
13. Note on Methylene Chloriodide. By Prof. J. Sakurai..	20	198
14. A Quick Method for the Estimation of Phosphoric Acid in Fertilisers. By J. S. Wells, Columbia College	20	185
15. On the Luminosity of Methane. By Lewis T. Wright, Assoc. M.I.C.E.....	21	200
16. On the Oxides of Nitrogen. By Prof. W. Ramsay and J. Tudor Cundall	22	157
<i>March 5th.</i>		
17. On the Conversion of Pelouze's Nitrosulphate into Hyponitrites and Sulphites. By Prof. E. Divers, M.D., and Tamemasa Haga.....	25	203

	Page in Abstracts.	Page in Trans- actions.
18. On the Constitution of some Non-saturated Oxygenous Salts, and the Reaction of Phosphorus Oxychloride with Sulphites and Nitrites. By Prof. E. Divers, M.D.	26	205
19. The Illuminating Power of Hydrocarbons I. Ethane and Propane. By Percy F. Frankland, Ph.D., B.Sc.	31	235
20. On Benzoylactic Acid, and some of its Derivatives, Part III. By Dr. W. H. Perkin, Jun.	31	262
<i>March 19th.</i>		
21. On the Presence of Choline in Hops. By Dr. Griess, F.R.S., and Dr. G. H. Harrow.	35	298
22. Fluorene. Part III. By Dr. W. R. Hodgkinson.	36	—
23. Combination in Dried Gases. By H. Brereton Baker, B.A.	37	349
<i>March 30th.</i>		
Annual General Meeting.	43	300
<i>April 2nd.</i>		
24. On the Formation of Hyponitrites from Nitric Oxide. By Prof. Divers and T. Haga.	45	361
25. On the Existence of Barium and Lead Nitrosulphates. By Prof. Divers and T. Haga.	45	364
26. Notes on Fractional Distillation in a Current of Steam. By Dr. M. E. Lazarus.	46	—
27. Derivatives of Taurine. Part I. By J. W. James.	46	367
28. On the Preparation of Ethylene Chlorothiocyanate and β -Chlorethanesulphonic Acid. By J. W. James.	47	365
29. The Orthovanadates of Sodium and their Analogues. By Harry Baker.	47	353
<i>April 16th.</i>		
30. A Crystalline Tricupric Sulphate. By W. H. Shenstone.	51	375
31. A Modified Bunsen Burner. By W. H. Shenstone.	51	378
32. The Chlorination of Phloroglucol. By C. S. S. Webster.	51	423
33. Note on the History of Thionyl Chloride. By C. Schorlemmer, F.R.S.	52	—
34. On the Reactions of Selenious Acid with Hydrogen Sulphide, and of Sulphurous Acid with Hydrogen Selenide. By Prof. E. Divers and T. Shimidzu.	52	441
35. On a New and Simple Method of Quantitative Separation of Tellurium and Selenium. By Prof. E. Divers and M. Shimosé.	53	439

	Page in Abstracts.	Page in Trans- actions.
<i>May 7th.</i>		
36. On some Points in the Composition of Soils; with Results illustrating the Sources of Fertility of Manitoba Prairie Soils. By Sir J. B. Lawes, Bart., LL.D., F.R.S., F.C.S., and J. H. Gilbert, LL.D., Ph.D., F.R.S., V.P.C.S.	55	380
37. Researches on the Relation between the Molecular Structure of Carbon Compounds and their Absorption Spectra. By Prof. W. N. Hartley, F.R.S.	59	605
38. Researches on the Action of the Copper-zinc Couple on Organic Bodies. Part X. Benzyl Bromide. By Dr. J. H. Gladstone, F.R.S., and Alfred Tribe.	60	448
39. On the Selective Alteration of the Constituents of Cast Iron. By Thomas Turner, Assoc. R.S.M.	61	474
40. On the Existence of Nitrous Anhydride in the Gaseous State. By Prof. G. Lunge	61	457
41. On the Reaction between Nitric Oxide and Oxygen under varying conditions. By Prof. G. Lunge	61	465
<i>May 21st.</i>		
42. A Colorimetric Method for Determining small quantities of Iron. By Andrew Thomson, M.A., B.Sc.	65	493
43. On some Sulphur Compounds of Calcium. By V. H. Veley	66	478
44. Spectroscopic Observations on Dissolved Cobaltous Chloride. By Dr. W. J. Russell, F.R.S.	67	—
45. On the Sulphides of Titanium. By Prof. T. E. Thorpe, F.R.S.	69	491
46. Note on the Formation of Titanous Chloride. By Prof. T. E. Thorpe, F.R.S.	70	—
<i>June 4th.</i>		
47. On the Constitution of the Haloid Derivatives of Naphthalene. By Prof. Meldola	71	497
<i>June 18th.</i>		
48. The Decomposition and Genesis of Hydrocarbons at High Temperatures. I. The Products of the Manufacture of Gas from Petroleum. By Henry E. Armstrong and A. K. Miller.	77	74*
49. On the Non-crystalline Products of the Action of Diastase upon Starch. By Horace T. Brown and G. H. Morris, Ph.D.	79	527
50. Decomposition of Carbonic Acid Gas by the Electric Spark. By H. B. Dixon, M.A., and H. F. Lowe, B.A.	83	571

XII

	Page in Abstracts.	Page in Trans- actions.
51. On the Influence of Silicon on the Properties of Cast Iron. By Thomas Turner.....	85	577
52. Eleven Months' Experience with Toughened Glass Beakers. By R. J. Friswell.....	86	—
53. Bromo-derivatives of Diphenyl, Tolyphenyl and Ditolyl. By Prof. Carnelley and Andrew Thomson.....	88	586
54. Note on the Influence of Strain on Chemical Action. By Prof. Carnelley and James Schlerschmann.....	89	—
55. On the Non-existence of Gaseous Nitrous Anhydride. By William Ramsay, Ph.D.....	90	672
56. On the Causes of the Decrepitation in Samples of so-called Explosive Pyrites. By B. Blount.....	90	593
57. On the Specific Action of a Mixture of Sulphuric and Nitric Acids upon Zinc in the Production of Hydroxyamine. By Prof. E. Divers and T. Shimidzu.....	90	597
58. On the Action of Pyrosulphuric Acid on certain Metals. By the same.....	92	636
59. On the Constitution and Reactions of Liquid Nitric Peroxide. By the same.....	93	630
60. On the Behaviour of Stannous Chloride towards Nitric Oxide and towards Nitric Acid. By Prof. E. Divers and T. Haga.....	94	623
61. Preliminary Note on the Reactions between Mercurous Nitrate and Nitric Oxide, and between Mercurous Nitrate and Nitrite. By the same.....	95	—
62. On some Derivatives of Anthraquinone. By A. G. Perkin and Dr. W. H. Perkin, Jun.....	97	679
<i>November 5th.</i>		
63. The Influence of Silicon on the Properties of Cast Iron. Part II. By Thomas Turner, Assoc. R.S.M.....	100	902
64. Modifications of Double Sulphates. By Spencer Umfreville Pickering, M.A.....	101	1*
65. The Relation of Diazobenzene-anilide to Amidoazobenzene. By R. J. Friswell and A. G. Green.....	102	917
66. An Examination of the Phenol Constituents of Blast Furnace Tar obtained by the Alexander and McCosh Process at the Gartsherrie Iron Works. By Watson Smith, J. F. H. Coutts and H. E. Brothers. Part I.	104	17*
67. The Decomposition of Potassium Chlorate by Heat. By Frank L. Teed, D.Sc., F.C.S.....	105	—
68. Note on the Refractive Power of Metacinnamene (Metastyrole). By H. G. Madan, M.A., F.C.S.....	106	—
<i>November 19th.</i>		
69. Aluminium Alcohols. Part III. Aluminium Orthocresylate and its Products of Decomposition by Heat. By J. H. Gladstone, F.R.S., and Alfred Tribe.....	111	25*

XIII

	Page in Abstracts.	Page in Trans- actions.
70. Notes on the Constitution of Hydrated and Double Salts. By Spencer U. Pickering.....	112	12*
71. Some New Vanadium Compounds. By J. T. Brierley..	114	30*
72. On the Action of PCl_5 upon Ethylic Diethylaceto- acetate. By J. W. James.....	114	50*
73. On the Vapour-pressures of Mercury. By W. Ramsay, Ph.D., and Sydney Young, D.Sc.	115	37*
<i>December 3rd.</i>		
74. On the Presence of "Raffinose" in Barley. By C. O'Sullivan, F.R.S.....	119	70*
75. On the Sugars of some of the Cereals and of Germinated Grain. By C. O'Sullivan, F.R.S.	120	58*
76. Atomic Valency. By S. U. Pickering	122	—
<i>December 17th.</i>		
77. The Action of Steam on Carbonic Oxide. By H. B. Dixon.....	128	94*
78. On Multiple Sulphates. By Miss E. Aston and S. U. Pickering	129	*
79. On the Use of Ferrous Sulphate in Agriculture. By A. B. Griffiths, Ph.D.	130	114*
80. On Phenyltribromomethane, $\text{C}_6\text{H}_5\cdot\text{CBr}_3$. By Walter H. Ince.....	131	—

* Papers printed in the Transactions for 1886 are thus distinguished. Where no reference is given to the Transactions, the paper has appeared only in the "Abstracts of Proceedings."

TITLES OF PAPERS PUBLISHED IN THE TRANSACTIONS BUT NOT IN THE ABSTRACTS OF PROCEEDINGS.

	PAGE
On the Unit adopted for the Atomic Weights. By Lothar Meyer and Karl Seubert.....	426
The Atomic Weight of Silver and Prout's Hypothesis. By Lothar Meyer and Karl Seubert.....	434
A Method for Obtaining Constant Temperatures. By Prof. W. Ramsay and Dr. Sydney Young.....	640
Researches on Secondary and Tertiary Azo-compounds. No. III. By Prof. R. Meldola.....	657
Note on the Spontaneous Polymerisation of Volatile Hydrocarbons at the Ordinary Atmospheric Temperature. By Sir Henry E. Roscoe, F.R.S.	669
On the Action of Gypsum in Promoting Nitrification. By R. Warrington ..	758
Contributions towards the History of Formyl and Thioformyl Compounds derived from Aniline and Homologous Bases. By Alfred Senier, M.D...	762
Action of Phenyleyanate on Polyhydric and certain Monohydric Alcohols and Phenols. By H. Lloyd Snape, B.Sc.....	770
Chemical Examination of the Constituents of Camphor Oil. By Hikorokuro Yoshida.....	779
On the Synthetical Formation of Closed Carbon Chains. By W. H. Perkin, Jun., Ph.D.....	801
Action of Sodie Alcoholates on Ethereal Fumarates and Maleates. By T. Purdie, Ph.D., B.Sc.....	855
Contributions to the Chemistry of the Cerite Metals. III. By B. Brauner, Ph.D.....	879
A New Method of Preparing Aromatic Hydrocarbons. By Richard Anschütz.....	898
On the Decomposition of Aromatic Ethereal Salts of Fumaric Acid. By Richard Anschütz and Quirin Wirtz.....	899
On an apparently New Hydrocarbon from Distilled Japanese Petroleum. By Edward Divers and Teikichi Nakamura.....	924

INDEX TO AUTHORS' NAMES.

Armstrong, H. E., 77.
Aston, Miss E., 129.

Baker, Brereton H., 37.
Baker, Harry, 47.
Blount, B., 90.
Brierley, J. T., 114.
Brothers, H. E., 104.
Brown, H. T., 79.
Brunton, T. Lauder, 5.

Carnelley, T., 88, 89.
Cooke, E. H., 19.
Coutts, J. F., 104.
Cundall, J. T., 22.

Divers, E., 25, 26, 45, 52, 53, 90, 92, 93,
94, 95.
Dixon, H. B., 83, 128.

Francis, E. E. H., 19.
Frankland, E., 9.
Frankland, P. F., 31.
Friswell, R. J., 86, 102.

Gilbert, J. H., 55.
Gladstone, J. H., 60, 111.
Green, A. G., 3, 102.
Griess, P., 35.
Griffiths, A. B., 130.

Haga, Tamemasa, 25, 45, 94, 95.
Harrow, G. H., 35.
Hartley, W. N., 59.
Hodgkinson, W. R., 36.

Ince, W. H., 131.

James, J. W., 46, 47, 114.

Lawes, Sir J. B., 55.
Lazarus, M. E., 46.
Lowe, H. F., 83.
Lunge, G., 61.

Madan, H. G., 106.
Meiers, H. A., 5.
Meldola, R., 71.
Miller, A. K., 77.
Morley, H. F., 3.
Morris, G. H., 79.

O'Sullivan, C., 119, 120.

Pechmann, H. v., 5.
Perkin, A. G., 97.
Perkin, W. H., Jun., 17, 31, 97.
Pickering, S. U., 101, 112, 122, 129.

Ramsay, W., 25, 90, 115.
Russell, W. J., 67.

Sakurai, J., 20.
Schlerschmann, J., 89.
Schorlemmer, C., 52.
Shenstone, W. H., 5, 51.
Shimidzu, T., 52, 90, 92, 93.
Shimosé, M., 53.
Smith, Watson, 104.
Stuart, C. M., 4.

Teed, F. L., 105.
Thomson, A., 65, 88.
Thorpe, T. E., 1, 69, 70.
Tribe, A., 60, 111.
Turner, T., 61, 85, 100.

Veley, V. H., 66.

Webster, C. S. S., 51.
Wells, J. S., 20.
Welsh, W., 5.
Wright, L. T., 21.

Young, S., 115.

INDEX TO DISCUSSIONS.

- | | |
|---|--|
| Abney, 68, 84. | Lloyd, 21. |
| Armstrong, 4, 22, 23, 30, 33, 39, 62, 69,
74, 84, 106. | McLeod, 69, 84. |
| Brunton, 12. | Morley, 4. |
| Clowes, 66. | Müller, 46, 47, 48. |
| Cowper, 84. | Odling, 26, 29. |
| Crookes, 41. | Perkin, W. H., 46. |
| Cross, 69. | |
| Debus, 29, 35, 38. | Ramsay, 24, 113. |
| Dewar, 3. | Riley, 21. |
| Dixon, 84. | Russell, 69. |
| Donkin, 84. | |
| Dyer, Thiselton, 14. | Sanderson, Burdon, 12. |
| | Spiller, 85. |
| Foster, M., 13. | Stevenson, 15, 20. |
| Frankland, E., 15. | |
| Frankland, P. F., 22, 66. | Teed, 106. |
| Friswell, 68. | Thudichum, 15. |
| | Tilden, 29. |
| Gladstone, 3. | Thomson, J. M., 130. |
| Groves, 20, 24, 74. | Turner, 86, 101. |
| Harcourt, Vernon, 41. | |
| Japp, 20, 26, 31. | Veley, 69. |
| | |
| | Warrington, 14. |
| | Wright, C. R. A., 24, 29, 40, 86, 101. |

INDEX OF SUBJECTS.

- Absorption spectra, their relation to molecular structure in carbon compounds, 59.
 Aluminium alcohols, 111.
 — orthocresylate, 111.
 Amidoazobenzene, 102.
 Annual General Meeting, 43.
 Anthraquinone, derivatives of, 97.
- Barley, presence of raffinose in, 119.
 Benzoylactic acid, derivatives of, 17, 31.
 Benzyl bromide and copper-zinc couple, 60.
 Blast furnace tar, phenol constituents of, 104.
 Bromostychnine, crystallography of, 5.
 — physiological action of, 5.
 Brucine, physiological action of, 5.
 Bunsen burner, a modified, 51.
- Calcium, sulphur compounds of, 66.
 Carbonic acid gas, decomposition of, by electric spark, 83.
 — oxide, action of steam on, 128.
 Cast iron, influence of silicon on the properties of, 85, 100.
 — — selective alteration of constituents of, 61.
 Cereals, the sugars of some of the, 120.
 Chemical action, influence of strain on, 89.
 β -Chlorethanesulphonic acid, preparation of, 47.
 Choline, presence of, in hops, 35.
 Cobaltous chloride, spectroscopic observations on, 67.
 Combustion in dried gases, 37.
 Copper-zinc couple and benzyl bromide, 60.
- Diastase, action of, on starch, 79.
 Diazobenzeneanilide, 102.
 Diethylacetacetate, action of PCl_5 on ethylic, 114.
 Diphenyl, bromo-derivatives of, 88.
 Distillation, fractional, in steam, 46.
 Ditolyl, bromo-derivatives of, 88.
- Double salts, constitution of, 112.
 — sulphates, modifications of, 101.
 Dried gases, combustion in, 37.
- Elizabeth Thompson Science Fund, 127.
 Ethane, illuminating power of, 31.
 Ethylene chlorothiocyanate, 47.
 Explosive pyrites, 90.
- Ferrous sulphate, use of, in agriculture, 130.
 Filter-paper, toughened, 19.
 Fluorene, 36.
 Fractional distillation in steam, 46.
- Gas, products of manufacture of, from petroleum, 77.
 Glass, toughened, experience with, 86.
 Grain, sugars in germinated, 120.
- Hops, presence of choline in, 35.
 Hydrated salts, constitution of, 112.
 Hydrocarbons, decomposition and genesis of, at high temperatures, 77.
 Hyponitrites, formation of, from nitric oxide, 45.
- Illuminating power of methane, ethane, and propane, 21, 31.
 Iodine, detection and estimation of, 19.
 Iron, determination of small quantities by a colorimetric method, 65.
 — influence of silicon on properties of cast, 85, 100.
 — selective alteration of constituents of cast, 61.
- Manitoba Prairie soils, 55.
 Mercurous nitrate and nitric oxide and nitrites, 95.
 Mercury, vapour-pressures of, 115.
 Metacinnamene, refractive power of, 106.
 Methane, luminosity of, 21.
 Methylene chloriodide, 20.
 Micro-organisms, chemical changes in their relation to, 9.
 Molecular structure and spectra, 59.

XVIII

- Naphthalene, constitution of haloid derivatives of, 71.
- Nitric acid, action of stannous chloride on, 94.
- oxide, action of stannous chloride on, 94.
- — reaction of, with oxygen, 61.
- peroxide, constitution and reactions of liquid, 93.
- Nitrites, action of phosphorus oxychloride on, 26.
- Nitrobenzalmalonic acids, 4.
- Nitrogen, oxides of, 22.
- Nitrosulphates, conversion of, into hypoxinitrites and sulphites, 25.
- existence of barium and lead, 45.
- Nitrous anhydride, existence of gaseous, 61.
- Orthovanadates of sodium, 47.
- Oxygenous salts, constitution of non-saturated, 26.
- Phenol constituents of blast furnace tar, 104.
- Phenyltolyl, bromo-derivatives of, 88.
- Phenyltribromomethane, 131.
- Phloroglucol, chlorination of, 51.
- Phosphoric acid, quick method of estimating, 20.
- Potassium chlorate, decomposition of, by heat, 105.
- Propane, illuminating power of, 31.
- Propylene chlorhydrol, oxidation of, 3.
- — action of zinc ethyl on benzoate from, 3.
- Pyridine-derivatives from coumalinic acid, 5.
- Pyrites, explosive, 90.
- Pyrosulphuric acid, action of, on certain metals, 92.
- Raffinose, presence of, in barley, 119.
- Selenium and tellurium, separation of, 53.
- Selenious acid, reaction of, with hydrogen sulphide, 52.
- Silicon, influence of, on properties of cast iron, 85, 100.
- Soils, points in the composition of, 55.
- Spectroscopic observations on cobaltous chloride, 67.
- Stannous chloride, action of, on nitric acid and oxide, 94.
- Starch, action of diastase on, 79.
- Steam, action of, on carbonic oxide, 128.
- Strain, influence of, on chemical action, 89.
- Strychnine, action of bromine and nitric acid on, 5.
- Sulphates, modifications of double, 101.
- multiple, 129.
- Sulphites, action of phosphorus oxychloride on, 26.
- Sulphur compounds of calcium, 66.
- Sulphuric acid, action of, on hydrogen selenide, 52.
- Taurine, derivatives of, 46.
- Tellurium and selenium, separation of, 53.
- Thionyl chloride, history of, 52.
- Titanium, atomic weight of, 1.
- sulphides of, 69.
- Titanous chloride, 70.
- Tolylphenyl, bromo-derivatives of, 88.
- Toughened glass, experience with, 86.
- Tricupric sulphate, 51.
- Valency, atomic, 122.
- Vanadium, new compounds of, 114.
- Vapour-pressure of mercury, 115.
- Zinc, action of mixtures of nitric and sulphuric acids on, 90.