

PROCEEDINGS  
OF THE  
ROYAL SOCIETY OF EDINBURGH.

PROCEEDINGS  
OF  
THE ROYAL SOCIETY  
OF  
EDINBURGH.

VOL. XLIII.

1922-1923.

EDINBURGH:  
PRINTED BY NEILL AND COMPANY, LIMITED.

MDCCCXXIV.

# CONTENTS.

	PAGE
1. The Primitive Spindle as a Fundamental Feature in the Embryology of Plants. Opening Address by Professor F. O. Bower, M.A., D.Sc., LL.D., F.R.S., F.L.S., President. Issued separately November 4, 1922, . . . . .	1
2. Observations on the Structure of the Hydrogen Lines $H_{\alpha}$ and $H_{\beta}$ . By A. E. M. Geddes, O.B.E., M.A., D.Sc., Lecturer in Natural Philosophy, Aberdeen University. <i>Communicated by</i> Dr C. G. Knott, F.R.S., General Secretary, R.S.E. Issued separately February 15, 1923, . . . . .	37
3. Double Binary Forms. By Professor H. W. Turnbull, M.A. Issued separately February 15, 1923, . . . . .	43
4. The Life-History of <i>Aphidius avenæ</i> (Hal.), a Braconid parasitic on the Nettle Aphis ( <i>Macrosiphum urticae</i> ). By Elsie I. MacGill, M.Sc. <i>Communicated by</i> Professor J. H. Ashworth, F.R.S. Issued separately March 31, 1923, . . . . .	51
5. Experiments with a Model to illustrate the Combination of Two Atoms consisting of Magnetons round a Positive Nucleus. By A. P. Laurie. Issued separately April 12, 1923, . . . . .	72
6. Division of Space by Congruent Triangles and Tetrahedra. By D. M. Y. Sommerville, M.A., D.Sc., Professor of Pure and Applied Mathematics, Victoria University College, Wellington, N.Z. Issued separately April 18, 1923, . . . . .	85
7. The Relation of Size to the Elaboration of Form and Structure of the Vascular Tracts in Primitive Plants. By Professor F. O. Bower, M.A., D.Sc., LL.D., F.R.S., F.L.S., President. Issued separately April 18, 1923, . . . . .	117
8. The Theory of Alternants, from 1896 to 1917. By Sir Thomas Muir, LL.D., F.R.S. Issued separately June 29, 1923, . . . . .	127
9. The Mechanism behind Relativity. By Professor W. Peddie. Issued separately June 29, 1923, . . . . .	149
10. An Electric Clock with Detached Pendulum and Continuous Motion. By Alex. Steuart, A.M.I.A.E. <i>Communicated by</i> D. R. Steuart, F.I.C. Issued separately April 21, 1923, . . . . .	154

	PAGE
11. Further Tests upon Dewar Flasks intended to hold Liquid Air. By Professor Henry Briggs, D.Sc., Ph.D., and John Mallinson, B.Sc. Issued separately June 29, 1923, . . . . .	160
12. The Interior and Exterior Space-Time Forms of the Poincaré Electron in Weyl's Geometry. By John Marshall, M.A., D.Sc., University College, Swansea. Issued separately July 10, 1923, . . . . .	170
13. A Static Model of the Hydrogen Molecule. By Professor H. Stanley Allen, M.A., D.Sc. Issued separately July 30, 1923, . . . . .	180
14. The Slow Oxidation of Phosphorus. By Elizabeth Gilchrist, M.A., B.Sc., Ph.D., Carnegie Research Fellow. <i>Communicated by</i> Professor Sir James Walker, F.R.S. Issued separately August 1, 1923, . . . . .	197
15. Notes on a New Method of investigating Colour Blindness. By R. A. Houstoun, D.Sc., Lecturer on Physical Optics in the University of Glasgow, and W. H. Manson, M.D., Surgeon, Glasgow Eye Infirmary. Issued separately August 1, 1923, . . . . .	216
16. The Sizes of Particles in certain Pelagic Deposits. By Miss A. Vibert Douglas, M.B.E., M.Sc. <i>Communicated by</i> Professor Sir E. Rutherford, F.R.S. Issued separately October 5, 1923, . . . . .	219
17. On the X-Ray Corpusecular Emission from Iron in a Magnetised and Unmagnetised State. By G. A. Carse, M.A., D.Sc., and D. Jack, M.A., B.Sc. Issued separately October 5, 1923, . . . . .	226
OBITUARY NOTICES:—Sir Isaac Bayley Balfour; John William Ballantyne; J. Sutherland Black; Alexander Crum Brown; John Chiene; Sir J. Halliday Croom; Sir James Dewar; William Evans; John Berry Haycraft; Thomas Nicol Johnston; Cargill Gilston Knott; Rev. James Lindsay; George Macritchie Low; John William Pare; Harry Rainy; Alexander Smith; C. Michie Smith; Thomas Coke Squance; William Thomson; John Charles Ogilvie Will; and Thomas Wood . . . . .	
	230-288
APPENDIX—	
Proceedings of the Statutory General Meeting, October 1922, . . . . .	291
Proceedings of the Ordinary Meetings, Session 1922-1923, . . . . .	293
Proceedings of the Statutory General Meeting, October 1923, . . . . .	297
The Keith, Makdougall-Brisbane, Neill, Gunning Victoria Jubilee, James Scott, and Bruce Prizes, . . . . .	300
Awards of the Keith, Makdougall-Brisbane, Neill, Gunning, James Scott, and Bruce Prizes, . . . . .	303
Accounts of the Society, Session 1922-1923, . . . . .	309

# Contents.

vii

	PAGE
<b>APPENDIX—</b>	
Voluntary Contributors under Law VI (end of para. 3), . . . . .	316
The Council of the Society at October 1923, . . . . .	317
Alphabetical List of the Ordinary Fellows of the Society, . . . . .	318
List of Honorary Fellows of the Society at February 15, 1924, . . . . .	338
List of Honorary and Ordinary Fellows of the Society elected during Session 1922-1923, . . . . .	340
Changes in Fellowship during Session 1922-1923, . . . . .	340
Additions to the Library—Presentations, etc.—1922-1923, . . . . .	341
Laws of the Society, . . . . .	345
Index, . . . . .	352
Index, under Authors' Names, of Papers published in <i>Transactions</i> , . . . . .	354