

PROCEEDINGS
OF THE
ROYAL SOCIETY OF EDINBURGH

PROCEEDINGS
OF
THE ROYAL SOCIETY
OF EDINBURGH

VOL. LIV.

1933-1934

EDINBURGH
PRINTED BY NEILL AND COMPANY, LIMITED

MCMXXXV

CONTENTS

	PAGE
1. On Fitting Polynomials to Weighted Data by Least Squares. By A. C. Aitken, M.A., D.Sc., University of Edinburgh. Issued separately November 29, 1933,	1
2. On Fitting Polynomials to Data with Weighted and Correlated Errors. By A. C. Aitken, M.A., D.Sc., University of Edinburgh. Issued separately November 29, 1933,	12
3. The Cruciform Muscle of Lamellibranchs. By Alastair Graham, M.A., B.Sc. (From the Department of Zoology, University of Sheffield.) <i>Communicated by</i> Professor J. H. Ashworth, F.R.S. (With Six Text-figures.) Issued separately February 26, 1934,	17
4. The Developmental Stages of <i>Euchata norvegica</i> , Boeck. By A. G. Nicholls, Ph.D., Assistant Naturalist, Marine Station, Millport. <i>Communicated by</i> Professor J. H. Ashworth, F.R.S. (With Eight Text-figures.) Issued separately March 15, 1934,	31
5. The Weight and Chemical Composition of <i>Euchata norvegica</i> , Boeck. By A. P. Orr, M.A., B.Sc., A.I.C., Chemist, Marine Station, Millport. <i>Communicated by</i> Professor J. H. Ashworth, F.R.S. Issued separately March 15, 1934,	51
6. Studies on the Reproductive System in the Guinea-Pig: Observations on the Ovaries, with special reference to the Corpus Luteum. By Thomas Nicol, M.B., Ch.B., F.R.C.S.E., Senior Lecturer in Anatomy, University of Glasgow. Issued separately March 15, 1934,	56
*7. Spermatogenesis in <i>Drosophila pseudo-obscura</i> Frolowa. II. The Cytological Basis of Sterility in Hybrid Males of Races A and B. By P. Ch. Koller, D.Sc., Institute of Animal Genetics, University of Edinburgh. <i>Communicated by</i> Professor F. A. E. Crew, M.D. (With Thirty-nine Text-figures.) Issued separately June 4, 1934,	67
8. The Atomic Weight of the Calcium contained in Very Old Potassium-rich Minerals occurring at Portsoy, Banffshire, and at Cape Wrath, Sutherlandshire. By William W. Smith and Thomas Tait. <i>Communicated by</i> Professor James Kendall, F.R.S. Issued separately June 21, 1934,	88

	PAGE
9. The Photoelectric Thresholds of some Turned Metallic Surfaces. By J. S. Hunter, B.Sc., Carnegie Research Scholar, University of St Andrews. <i>Communicated by Professor H. S. Allen, F.R.S. (With Two Figures.)</i> Issued separately June 21, 1934,	102
10. Note on the Electron Configurations p^2s , p^4s . By Robert Schlapp, M.A., Ph.D., University of Edinburgh. Issued separately July 5, 1934,	109
11. Graphical Classification of Carbonaceous Minerals: The Mineral Oils. By Professor Henry Briggs, D.Sc., Ph.D., University of Edinburgh. (With Chart.) Issued separately July 16, 1934.	115
12. Products of the Natural Development of Coal and Oil. By Professor Henry Briggs, D.Sc., Ph.D., University of Edinburgh. (With Two Figures.) Issued separately July 16, 1934,	121
13. Some Integrals, with respect to their Degrees, of Associated Legendre Functions. By Professor T. M. MacRobert, M.A., D.Sc., University of Glasgow. Issued separately July 16, 1934,	135
14. Fifty Years Ago, in the Royal Society of Edinburgh. By Professor D'Arcy Wentworth Thompson. (With Two Plates.) (An Address delivered, at the request of the Council, on May 7, 1934, in commemoration of the 150th Year of the Society.) Issued separately August 8, 1934,	145
15. The Structure and Relationships of Lamellibranchs possessing a Cruciform Muscle. By Alastair Graham, M.A., B.Sc.(Edin.), Department of Zoology, Birkbeck College, University of London. <i>Communicated by Professor J. H. Ashworth, F.R.S. (With Thirteen Figures.)</i> Issued separately August 20, 1934,	158
16. On a New Species of <i>Psymnophyllum</i> from the Upper Carboniferous of Scotland. By Jessie A. R. Wilson, B.Sc., Ph.D., University of Glasgow. <i>Communicated by Professor J. Walton, D.Sc. (With Plate.)</i> Issued separately September 1934,	188
OBITUARY NOTICES: Arthur Henry Hallam Anglin; Frederick Alexander Black; Henry Moubray Cadell; Santiago Ramón y Cajal; George Coull; James Bell Dobbie; James Cossar Ewart; James Haig Ferguson; Sir William Bate Hardy; Sir Alexander Cruikshank Houston; Christopher Nicholson Johnston (Lord Sands); Andrew William Kerr; David Lees; Alexander Veitch Lothian; Sir Donald MacAlister, Bart.; David Clark Thomson Mekie; Sir Thomas Muir; Arthur J. Pressland; Charles Edward Price; Sir Arthur Schuster; Dukinfield Henry Scott; James Young Simpson; Robert Somerville; Duncan M'Laren Young Sommerville; Swale Vincent,	193
APPENDIX—	
Proceedings of the Statutory General Meeting, October 1933,	227
Proceedings of the Ordinary Meetings, Session 1933–34,	230
Proceedings of the Statutory General Meeting, October 1934,	236

Contents.

vii

	PAGE
The Keith, Makdougall-Brisbane, Neill, Gunning Victoria Jubilee, James Scott, Bruce, and David Anderson-Berry Prizes, and the Bruce-Preller Lecture Fund,	239
Awards,	243
Accounts of the Society, Session 1933-1934,	251
Voluntary Contributors under Law VI (end of para. 3),	259
The Council of the Society at October 22, 1934,	260
Fellows of the Society at October 22, 1934,	261
Honorary Fellows of the Society at October 22, 1934,	288
Changes in Fellowship during Session 1933-1934,	290
Fellows of the Society elected during Session 1933-1934,	290
Laws of the Society,	291
Additions to the Library—Presentations, etc.—1933-34,	299
Index,	303
Index, under Authors' Names, of Papers published in <i>Transactions</i> ,	306

* The thanks of the Society are due to the Carnegie Trust for the Universities of Scotland for grants towards the cost of illustrations and tables in this paper and in that by Dr R. A. R. Gresson, published in *Proceedings*, Vol. LIII, 1933, pp. 322-346.