PROCEEDINGS

OF

THE ROYAL SOCIETY OF EDINBURGH

Section B (Biology)

VOL. LXIV

1949-1952

PUBLISHED BY OLIVER & BOYD EDINBURGH: TWEEDDALE COURT LONDON: 98 GREAT RUSSELL STREET, W.C. 1

1952

CONTENTS

NO.	PAGE
 A Fish Cultivation Experiment in an Arm of a Sea-loch. I. Introduction. By Fabius Gross, D.Sc., Department of Zoology, University of Edinburgh. Issued separately June 30, 1950,	
 A Fish Cultivation Experiment in an Arm of a Sea-loch. II. Observations on some Hydrographic Factors in Kyle Scotnish. By S. R. Nutman. (With Six Text-figures.) Issued separately June 30, 1950, 	
3. A Fish Cultivation Experiment in an Arm of a Sea-loch. III. The Plankton of Kyle Scotnish. By D. T. Gauld, B.Sc., Ph.D., Department of Zoology, University of Edinburgh. (With Four Text-figures.) Issued separately June 30, 1950,	
4. A Fish Cultivation Experiment in an Arm of a Sea-loch. IV. The Bottom Fauna of Kyle Scotnish. By J. E. G. Raymont, B.Sc., A.M., Department of Zoology, University of Edinburgh, and Department of Zoology, University College, Southampton. (With Eight Text-figures.) Issued separately June 30, 1950,	
5. A Fish Cultivation Experiment in an Arm of a Sea-loch. V. Fish Growth in Kyle Scotnish. By Fabius Gross, D.Sc., Department of Zoology, University of Edinburgh. (With Four Text-figures.) Issued separately June 30, 1950,	
*6. Studies in Penicillin Formation. By R. P. Cook, M.B., D.Sc., and Margaret B. Brown, B.Sc., Ph.D., Department of Biochemistry, University College, Dundee. [University of St Andrews.] (With Six Text-figures.) Issued separately July 3, 1950,	
*7. Observations on the Golgi Material of the Neurones of the Central Nervous System of Fowl affected with <i>Neurolymphomatosis gallinarum</i> . By K. S. Chodnik, Department of Zoology, University of Edinburgh. <i>Communicated</i> by Dr R. A. R. Gresson. (With One Plate and Twenty-two Text-figures.) Issued separately July 3, 1950,	7
 *8. The Adventures of an Hypothesis. By James Kendall, M.A., D.Sc., F.R.S., P.R.S.E. (With Two Text-figures.) Issued separately July 3, 1950, 	
*9. Behaviour of the Ring-Chromosome in <i>Drosophila melanogaster</i> . By P. Battacharya, Institute of Animal Genetics, University of Edinburgh. <i>Communicated by</i> Dr A. W. Greenwood, Poultry Research Centre, Edinburgh. Issued separately July 22, 1950,	
*10. Inheritance of Resistance to Blight (<i>Phytophthora infestans</i>) in Potatoes: Strain C and its Relationships. By William Black, B.Sc., Ph.D., Scottish Plant Breeding Station, Corstorphine, Edinburgh. (With One Text-figure.) Issued separately July 22, 1950,	L
v	

Contents

NO. II.	Note on the Feeding of Amphioxus (<i>Branchiostoma bermuda</i>). By R. Dennell, D.Sc., Department of Zoology, The University, Manchester. <i>Communicated by</i> Professor H. Graham Cannon, F.R.S. (With Two Text-figures.) Issued separately July 22, 1950,	раде 229
*I2.	The Respiratory Movements of the Lamprey (Lampetra fluviatilis). By T. D. M. Roberts, B.Sc., Ph.D., Zoology Department, University of Glasgow. Communicated by Professor James Ritchie, C.B.E., D.Sc. (With Ten Text-figures.) Issued separately July 22, 1950,	235
*13.	The History, Organisation and Work of Moredun Institute Animal Diseases Research Association. By Dr Russell Greig, C.B.E., M.R.C.V.S. (With One Plate.) Issued separately January 26, 1952,	253
*14.	Rowett Research Institute. By The Director, D. P. Cuthbertson, M.D., D.Sc., Bucksburn, Aberdeenshire. (With Two Plates.) Issued separately January 26, 1952,	257
15.	Quantitative Evolution. XX. Correlations in Rates of Diversification. By Professor James Small, Queen's University, Belfast. (With Eight Text- figures.) Issued separately January 26, 1952,	277
*16.	Vascular Architecture of the Rat Uterus. By Archibald Young, Department of Anatomy, University of Glasgow. <i>Communicated by</i> Professor G. M. Wyburn. (With Five Plates and Six Text-figures.) Issued separately January 26, 1952,	292
*17.	Inheritance of Resistance to Blight (<i>Phytophthora infestans</i>) in Potatoes: Inter-Relationships of Genes and Strains. By William Black, B.Sc., Ph.D., Scottish Plant Breeding Station, Corstorphine, Edinburgh. (With Six Text-figures.) Issued separately January 26, 1952,	312
*18.	The Spermatozoon of the Spider Beetle <i>Ptinus tectus</i> Boieldieu as seen by Light and Electron Microscopy. By Jozef Dlugosz, B.Sc., and John W. Harrold, B.Sc., Natural Philosophy and Natural History Departments, University of St Andrews, University College, Dundee. <i>Communicated by</i> Professor A. D. Peacock, D.Sc., and Professor G. D. Preston, M.A., Sc.D. (With Two Plates and One Text-figure.) Issued separately January 26, 1952,.	353
19.	Quantitative Evolution. XXI. Some Correlations in the Present Results of Production Rates. By Professor James Small, Queen's University, Belfast. (With Two Text-figures.) Issued separately July 4, 1952,	367
*20.	The Rate of Growth of <i>Venerupis pullastra</i> (Montagu) at Millport, Scotland. By D. B. Quayle, M.A., Ph.D. <i>Communicated by</i> Professor C. M. Yonge, F.R.S. (With Five Text-figures and Ten Tables.) Issued separately July 4, 1952,	384
21.	Estimation of Fertile and Infertile Marriages and Size of Family. By C. Margaret Burns, M.A. (Cantab.). <i>Communicated by</i> Professor David Burns, M.A., D.Sc., King's College, University of Durham. Issued separately July 4, 1952,	407

vi

Contents

мо. *22,	A Preliminary Report on the Echiuridæ and Sipunculidæ of Zanzibar. By	PAGE
	A. C. Stephen, D.Sc., Royal Scottish Museum, Edinburgh, and J. D. Robertson, B.Sc., M.B., Ch.B., Peace Memorial Museum, Zanzibar. (With One Plate and Two Text-figures.) Issued separately July 4, 1952, .	426
	(White one Thate and Two Test inguies.) Subuce Separatory July 4, 1932,	420
*23.	Sexual Maturity in Brown Leghorns. The Interactions of Genotype and Environment. By Robert Osborne, Poultry Research Centre, Edinburgh.	
	Communicated by Dr A. W. Greenwood. (With Two Text-figures.)	
	Issued separately July 4, 1952,	445
*24.	On the Sampling Variance of Heritability Estimates derived from Variance Analyses. By Robert Osborne, Poultry Research Centre, Edinburgh, and W. S. B. Paterson, Institute of Animal Genetics, University of Edinburgh. <i>Communicated by</i> Dr A. W. Greenwood. Issued separately July 4, 1952,	456
25.	Observations on the Birthcoats and Skins of Several Breeds and Crosses of British Sheep. By A. S. Fraser and M. K. O. Hamada, Genetics Labora- tory, Animal Breeding and Genetics Research Organisation, Edinburgh. <i>Communicated by</i> Professor C. H. Waddington, F.R.S. (With One Plate and Five Text-figures.) Issued separately July 4, 1952,	162
	and five feat-inguies.) issued separately July 4, 1952,	462

* The thanks of the Society are due to the Carnegie Trust for the Universities of Scotland for grants towards the costs of the illustrations, tables, etc., in these papers.